SOREL Mikroelektronik GMBH

Catalogue

April 2012

Thermal Control made simple

SOREL Connect

Dear SOREL customer,

Our 20th anniversary has just gone by and be sure we celebrated this special occasion duly. We have been just as active, though, in further enhancing our products that are designed to make thermal control as simple as possible for our customers and again for their customers. SOREL is deeply rooted in the solar thermal industry and had its big breakthrough with the release of the TDC series which has become renowned for its unique usability over time.

This year, we are proud to release the **next generation of solar controllers** which raise the bar once more in terms of flexibility and ease of use. Now that our portfolio spans the full range of solar applications they carry new names from small (STDC) over medium (MTDC) and large (LTDC) to extra large (XTDC). Have a look at pages 16 - 22 to find out which size fits your needs!

For combined systems, the **brand new XHCC system controller** has been developed to conveniently manage various heat sources such as solar, solid fuel, burner or heat pump in a single device. The idea is to give you the possibility to compose your own heating systems within a few minutes in a very simple way. We think we really created something special here and invite you to learn more about it by having a look at our homepage on www.sorel.de or by requesting a PC simulation.

Our heating, fresh water and heat pump controllers with the respective accessories as well as a broad variety of pump groups complete our offering.

We are looking forward to a great collaboration with you!

Georg Bicher, CEO

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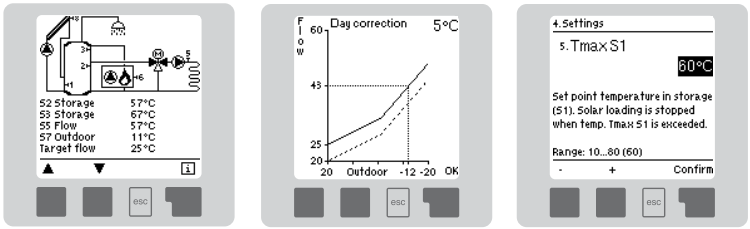
SOREL Advantages

Intuitive Operator Guidance



Self-explanatory full text menu for quick understanding

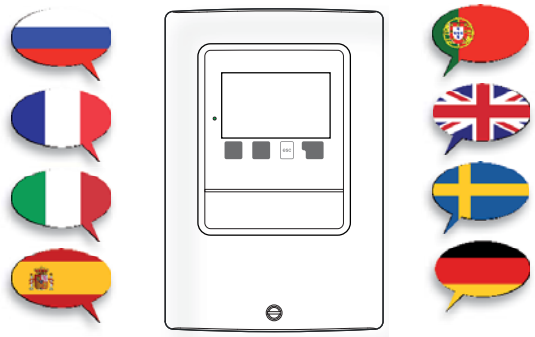
Local Support

Qualified technical support in 30 countries to answer your questions

PC Simulation

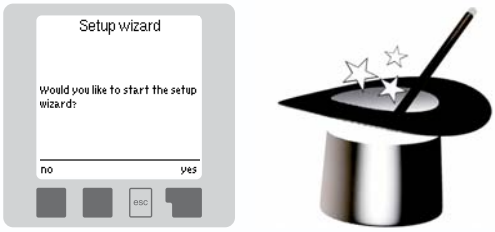
Handy tool for marketing, training and self-study

Multilingualism



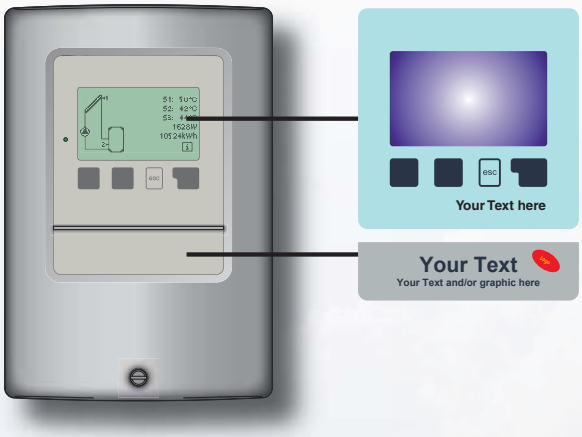
Convenient operating in your native language, great export opportunities

Setup Wizard



Guided setup for quick and easy commissioning

OEM Customizations



Easy adaption of the product and its parts to your brand

New features in the 2012 TDC generation

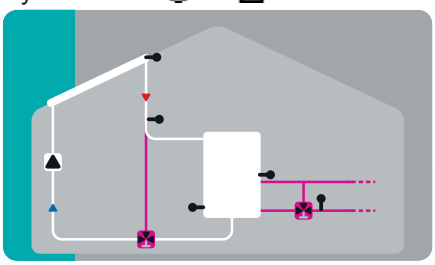
Additional functions to extend predefined systems

In the new TDC generation, the predefined systems can be extended by free relays in an easy and flexible way. Whenever the controller is equipped with more outputs than the chosen schematic requires, the remaining relays can be assigned to a broad selection of additional functions. The user is then guided through the corresponding settings step by step. Functions that complement one another, such as thermostat and anti-legionella function, can be controlled by the same relay. Also the sensors can be used for multiple functions at the same time.

- Solar bypass
- Backup heating
- Cooling
- Return increase
- Heating circuit
- Temp. difference
- Pressure monitor
- Always on
- Anti legionella
- Parallel operation
- Storage transfer
- Solid fuel boiler
- Booster pump
- Error message

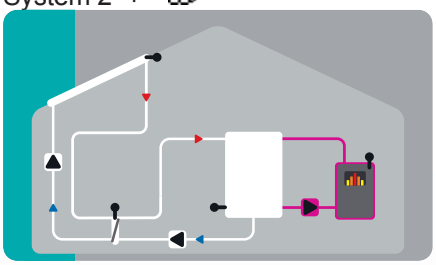
Examples:

System 1 + +



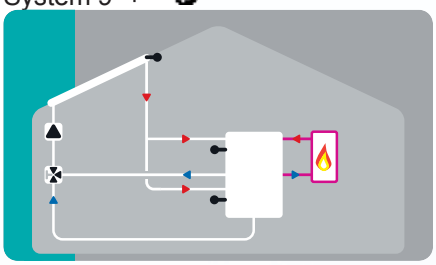
Solar with storage
with additional functions Solar Bypass and Return Flow Increasee

System 2 +



Solar with heat exchanger
with additional function Solid Fuel Boiler

System 9 +



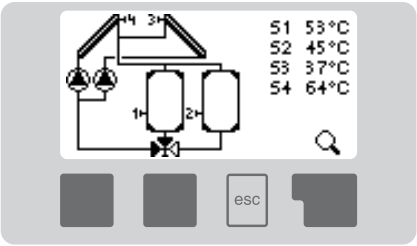
Solar with 2 zone storage and switching valve
with additional function Thermostat

SOREL Connect for network capabilities

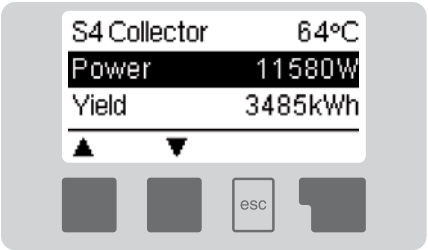
SOREL Connect

Controllers with SOREL Connect capability are equipped with a CAN-Bus interface for system monitoring, data logging and full remote control. For more information on the new network concept, see page 42.

Display Zoom function



Overview



Zoomed overview

By pressing a single button in the overview screen, the main temperature values and yield statistics are clearly displayed.

Speed control and High Efficiency pump control

All models are available in different versions with variable relay combinations. In this way, every controller from small to Xtra large can be equipped with or without speed-control of standard pumps, high-efficiency pumps or both, just according to your needs.

TDC comparison table	STDC	MTDC	LTDC	XTDC
Temperature Sensor Inputs	3	3	5-6	8
Relay outputs 230V of which for speed control of standard pumps	1 0-1	2 0-1	3 0-2	7 2
Outputs 0..10V or PWM signal	0-1	0-1	1-2	2
Number of predefined applications	9	25+	36+	48+
LEDs red/green for display of operating status	0	1	1	2
Simple heat metering	✓	✓	✓	✓
Flow based heat metering (VFS sensor)	×	×	0-2	2
Pressure monitoring (RPS sensor)	×	×	0-2	2
RTC battery-backed Real Time Clock	✓	✓	✓	✓
Digital interface / CAN Bus system	×	×	✓	✓
Data logging on SD-Memory Card	×	×	✓(via data logger)	✓
Ethernet connection	×	×	✓(via data logger)	✓

STDC

Small Temperature Difference Controller
for simple solar, storage and solid fuel boiler-systems

Hydraulic variants on page 16

Connections

- 3 sensor inputs for Pt1000 temperature sensors
- Outputs based on version

Features

- For 9 basic systems with solar or solid fuel boiler
- Intuitive operator guidance via 4 input keys
- Full text and graphical display with animations
- High-contrast lighted display with 128x64 dots
- Function check and graphical system analysis with long-term memory for statistics about heat quantity and operating hours
- RTC Real Time Clock with >24h power reserve
- White housing RAL9003, protection class IP40
- Dimensions HWD 115x86x45mm
- Mounting hardware, spare fuse and user manual

Menu languages

Český	Dansk	Deutsch	Ελληνικά
English	Español	Français	Hrvatski
Italiano	Magyar	Nederlands	Português
Polski	Русский	Svenska	Suomi
Türkçe	Български език		

Temperature sensor inputs Pt1000	3
Relay outputs 230V	1
of which for speed control of standard pumps	0-1
Outputs 0..10V or PWM signal	0-1
Number of applications	9
LEDs red/green for display of operating status	0
Simple heat metering	Yes
Flow based heat metering (Grundfos VFS sensor)	No
Time and temperature-controlled thermostat function	Yes
Battery-backed Real Time Clock	Yes
Legionella protection via solar	Yes
Legionella protecion via additional heating	No
Cooling function	No
Setup wizard	Yes
System protection	Yes
Collector protection	Yes
Storage protection	Yes
Anti-freeze programs	Yes
Recooling	Yes
Start logic for vacuum tube collectors	Yes
Control program for self-dumping systems (drain-back)	Yes
Data storage with statistics and graphic analysis	Yes
Error memory and analysis with date and time	Yes
Menu blocker	Yes
Ethernet connection with pc software (optional)	No

Prices ex works excl. sales tax. SOREL GmbH terms and conditions as can be seen on www.sorel.de shall apply. Discount on request.

Temperature Difference Controllers TDC

Version 1
1 mechanical relay (change over contact)

- Art. no. 10001 - STDC V1
- Art. no. 10201 - STDC V1 with 2 sensors
- Art. no. 10301 - STDC V1 with 3 sensors

Version 2
1 solid state relay
for speed control of standard pumps

- Art. no. 10002 - STDC V2
- Art. no. 10202 - STDC V2 with 2 sensors
- Art. no. 10302 - STDC V2 with 3 sensors

Version 3
1 mechanical relay (change over contact)
1 PWM / 0-10V output
for high efficiency pumps

- Art. no. 10003 - STDC V3
- Art. no. 10203 - STDC V3 with 2 sensors
- Art. no. 10303 - STDC V3 with 3 sensors

Version 4
1 solid state relay
for speed control of standard pumps
1 PWM / 0-10V output
for high efficiency pumps

- Art. no. 10004 - STDC V4
- Art. no. 10204 - STDC V4 with 2 sensors
- Art. no. 10304 - STDC V4 with 3 sensors

MTDC

Midsize Temperature Difference Controller
For 25 basic systems with solar or solid fuel boiler
with additional functions for unused relays

Hydraulic variants on page 16

Connections

- 3 sensor inputs for Pt1000 temperature sensors
- Outputs based on version

Features

- For 25 basic systems with solar or solid fuel boiler with additional functions for unused relays
- Intuitive operator guidance via 4 input keys
- Full-text menu with explanatory texts and graphic mode with animations
- High-contrast lighted display with 128x64 dots
- RTC Real Time Clock with >24h power reserve
- White housing RAL9003, protection class IP40
- Dimensions HWD 163x110x51mm
- Mounting hardware, spare fuse and user manual

Menu languages

Český	Dansk	Deutsch	Ελληνικά
English	Español	Français	Hrvatski
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Polski	Русский	Svenska	Suomi
Türkçe	Български език		

Temperature sensor inputs Pt1000	3
Relay outputs 230V	2
of which for speed control of standard pumps	0-1
Outputs 0..10V or PWM signal	0-1
Number of applications	25
LEDs red/green for display of operating status	1
Simple heat metering	Yes
Flow based heat metering (Grundfos VFS sensor)	No
Time and temperature-controlled thermostat function	Yes
Battery-backed Real Time Clock	Yes
Legionella protection via solar	Yes
Legionella protecion via additional heating	Yes
Cooling function	Yes
Setup wizard	Yes
System protection	Yes
Collector protection	Yes
Storage protection	Yes
Anti-freeze programs	Yes
Recooling	Yes
Start logic for vacuum tube collectors	Yes
Control program for self-dumping systems (drain-back)	Yes
Data storage with statistics and graphic analysis	Yes
Error memory and analysis with date and time	Yes
Menu blocker	Yes
Ethernet connection with pc software (optional)	No

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Version 1
2 mechanical relays on /off

- Art. no. 16001 - MTDC V1
- Art. no. 16201 - MTDC V1 with 2 sensors
- Art. no. 16301 - MTDC V1 with 3 sensors

Version 2
1 mechanical relay on / off
1 solid state relay
for speed control of standard pumps

- Art. no. 16002 - MTDC V2
- Art. no. 16202 - MTDC V2 with 2 sensors
- Art. no. 16302 - MTDC V2 with 3 sensors

Version 3
2 mechanical relays on / off
1 PWM / 0-10V output
for high efficiency pumps

- Art. no. 16003 - MTDC V3
- Art. no. 16203 - MTDC V3 with 2 sensors
- Art. no. 16303 - MTDC V3 with 3 sensors

Version 4
1 mechanical relay on / off
1 solid state relay
for speed control of standard pumps
1 PWM / 0-10V output
for high efficiency pumps

- Art. no. 16004 - MTDC V4
- Art. no. 16204 - MTDC V4 with 2 sensors
- Art. no. 16304 - MTDC V4 with 3 sensors

LTDC

Large Temperature Difference Controller
For 36 basic systems with solar or solid fuel boiler with additional functions for unused relays
VFS and RPS flow and pressure monitoring
Remote Control and Data Logging via external Datalogger

Hydraulic variants on page 16

Connections

- 5-6 sensor inputs for Pt1000 temperature sensors
- CAN socket for SOREL Connect
- Outputs based on version

Features

- For 36 basic systems with solar or solid fuel boiler with additional functions for unused relays
- 2 In / Out Connectors for SOREL Connect data logger and ethernet bridge.
- Intuitive operator guidance via 4 input keys
- Full text and graphical display with animations
- High-contrast lighted display with 128x64 dots
- RTC Real Time Clock with >24h power reserve
- White housing RAL9003, protection class IP40
- Dimensions H 163x110x51mm
- Mounting hardware, spare fuse and user manual

Menu languages

Český	Dansk	Deutsch	Ελληνικά
English	Español	Français	Hrvatski
Italiano	Magyar	Nederlands	Português
Polski	Русский	Svenska	Suomi
Türkçe	Български език		

Temperature sensor inputs Pt1000	5-6
Relay outputs 230V	3
of which for speed control of standard pumps	0-2
Outputs 0..10V or PWM signal	1-2
Number of applications	36+
LEDs red/green for display of operating status	1
Simple heat metering	Yes
Flow based heat metering (Grundfos VFS sensor)	Yes
Time and temperature-controlled thermostat function	Yes
Battery-backed Real Time Clock	Yes
Legionella protection via solar	Yes
Legionella protecion via additional heating	Yes
Cooling function	Yes
Setup wizard	Yes
System protection	Yes
Collector protection	Yes
Storage protection	Yes
Anti-freeze programs	Yes
Recooling	Yes
Start logic for vacuum tube collectors	Yes
Control program for self-dumping systems (drain-back)	Yes
Data storage with statistics and graphic analysis	Yes
Error memory and analysis with date and time	Yes
Menu blocker	Yes
Ethernet connection (via Data Logger)	Yes

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Temperature Difference Controllers TDC

Version 1
3 mechanical relays on / off (2 on/off, 1 changeover)
1 PWM / 0-10V output for high efficiency pumps
5 PT1000 temperature inputs

Art. no. 17001 - LTDC V1

Art. no. 17301 - LTDC V1 with 3 sensors

Art. no. 17401 - LTDC V1 with 4 sensors

Art. no. 17501 - LTDC V1 with 5 sensors

Version 2
2 mechanical relays (1 on/off, 1 changeover contact)
1 solid state relay for speed control of standard pumps
1 PWM / 0-10V output for high efficiency pumps
5 PT1000 temperature inputs

Art. no. 17002 - LTDC V2

Art. no. 17302 - LTDC V2 with 3 sensors

Art. no. 17402 - LTDC V2 with 4 sensors

Art. no. 17502 - LTDC V2 with 5 sensors

Version 3
3 mechanical relays (2 on/off, 1 changeover)
2 PWM / 0-10V output for high efficiency pumps
6 PT1000 temperature inputs
1-2 VFS / RPS Direct Sensor inputs

Art. no. 17003 - LTDC V3

Art. no. 17303 - LTDC V3 with 3 sensors

Art. no. 17403 - LTDC V3 with 4 sensors

Art. no. 17503 - LTDC V3 with 5 sensors

Version 4
1 mechanical relay (changeover contact)
2 solid state relays for speed control of standard pumps
2 PWM / 0-10V output for high efficiency pumps
6 PT1000 temperature inputs
1-2 VFS /RPS Direct Sensor inputs

Art. no. 17004 - LTDC V4

Art. no. 17304 - LTDC V4 with 3 sensors

Art. no. 17404 - LTDC V4 with 4 sensors

Art. no. 17504 - LTDC V4 with 5 sensors

XTDC

XtraLarge Temperature Difference Controller
for flexible control of complex solar thermal systems
48 basic systems with up to 4 storages
with additional functions for unused relays

SOREL Connect

Hydraulic variants on page 19
Additional functions for unassigned relays on page 22

Art. no. 18001 - XTDC with CAN

Art. no. 18002 - XTDC with CAN and Ethernet and basic PC Software for analyses

Temperature Difference Controllers TDC

Connections

- 8 sensor inputs for Pt1000 temperature sensors
- 2 sensor inputs for Grundfos VFS sensors for heat metering (flow and temperature measurement), alternatively pressure monitoring via Grundfos RPS sensor
- Expansion jack for RC21
- 2 outputs 0..10V or PWM signal for control of high efficiency pumps, large pumps and frequency converters
- 2 switching outputs for speed control of standard pumps
- 4 relay on/off outputs mechanical 230VAC
- 1 relay changeover output potential free
- CAN in/out for SOREL Connect
- Micro SD Memory Card Slot
- Ethernet connection (optional)

Features

- For 48 basic solar systems with additional functions for unused relays
- Intuitive operator guidance via 4 input keys
- Full-text menu with explanatory texts and graphic mode with animations
- High-contrast lighted display with 128x128 dots
- Function check and graphical system analysis with long-term memory for statistics about heat quantity and operating hours
- RTC Real Time Clock with >24h power reserve
- White housing RAL9003, protection class IP40,
- Dimensions HWD 228x180x 53mm
- Mounting hardware, spare fuse and user manual

Menu languages

Deutsch English Español Français
Italiano Português Polski

Temperature sensor inputs Pt1000	8
Additional sensors via optional expansion jack	3
Relay outputs 230V	6
of which for speed control of standard pumps	2
Relay output potential free	1
Outputs 0..10V or PWM signal	2
Number of applications	48+
LEDs red/green for display of operating status	2
Simple heat metering	Yes
Flow based heat metering (Grundfos VFS sensor)	Yes (1-2)
Pressure monitoring (Grundfos RPS sensor)	Yes
Time and temperature-controlled thermostat function	Yes
Battery-backed Real Time Clock	Yes
Legionella protection via solar	Yes
Legionella protecion via additional heating	Yes
Cooling function	Yes
Setup wizard	Yes
System protection	Yes
Collector protection	Yes
Storage protection	Yes
Anti-freeze programs	Yes
Recooling	Yes
Start logic for vacuum tube collectors	Yes
Control program for self-dumping systems (drain-back)	Yes
Data storage with statistics and graphic analysis	Yes
Error memory and analysis with date and time	Yes
Menu blocker	Yes
Data logging on Micro-SD-Memory Card	Yes
Ethernet connection with pc software (optional)	Yes
Digital connection / bus system (optional)	Yes

Hydraulic variants STDC, MTDC, LTDC

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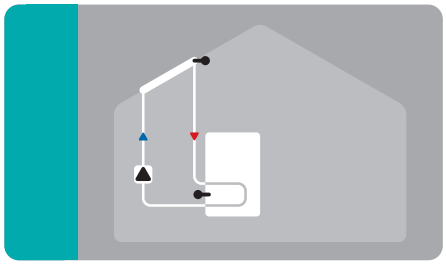
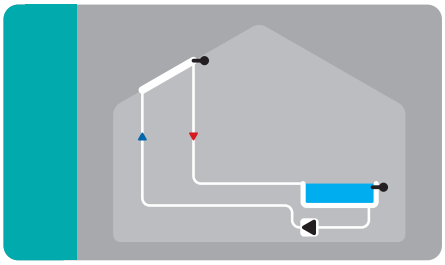
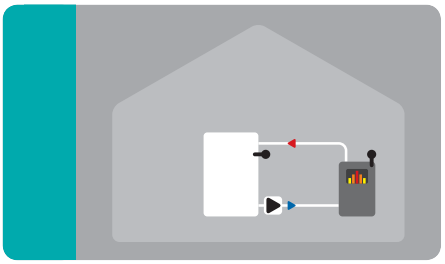
page 1/3



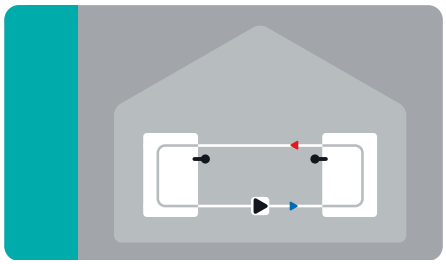
Solar with storage



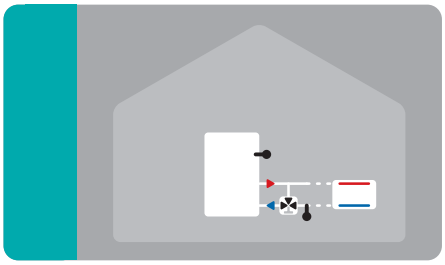
Solar with swimming pool



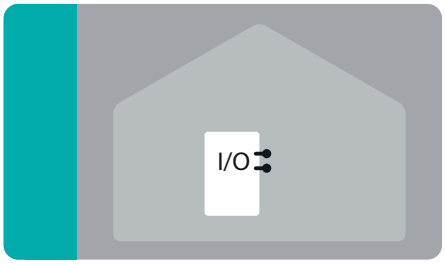
Solid fuel boiler with storage



Storage transfer

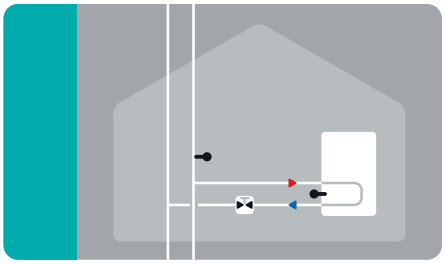


Return flow increase

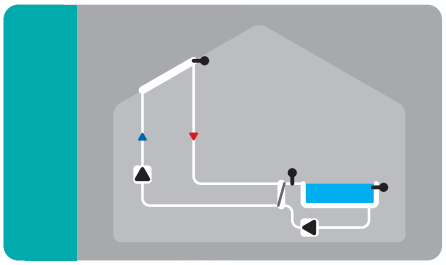


Thermostat function

Universal DeltaT



Stop valve



Solar with heat exchanger (sensor in secondary circuit) and pool
Not included in STDC V1 and STDC V2

Hydraulic variants MTDC and LTDC

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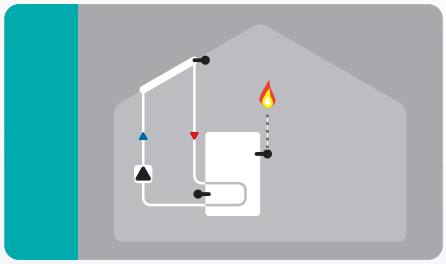
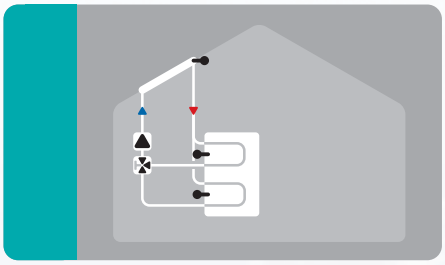
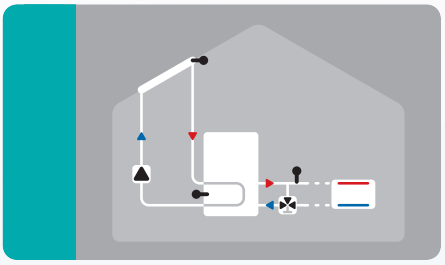


Solar with thermostat (auxiliary heating)



Solar with two-zone storage



Solar with heating circuit

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Hydraulic variants MTDC and LTDC

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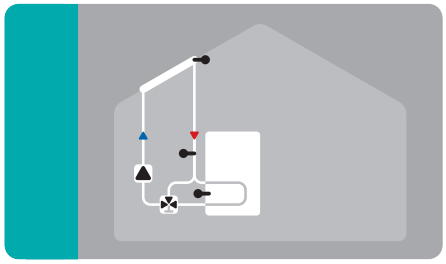
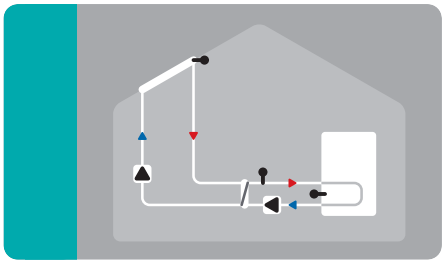
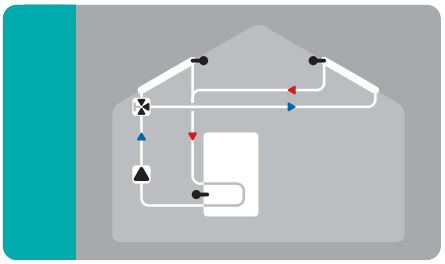


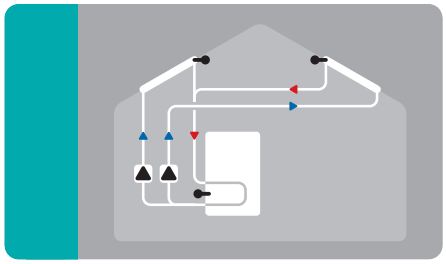
Solar with bypass



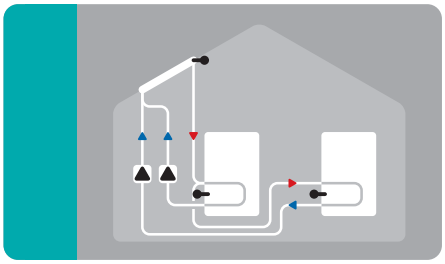
Solar with heat exchanger



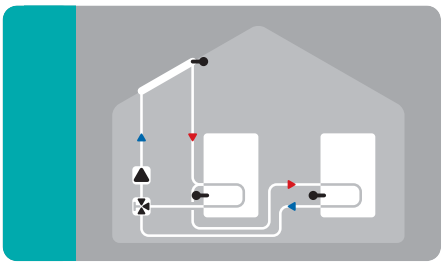
Solar with 2 collector surfaces



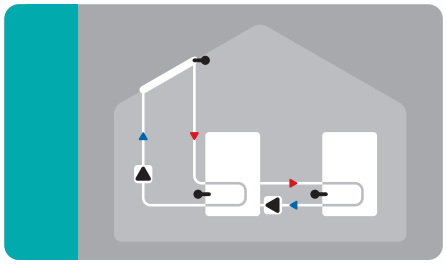
Solar with 2 collector surfaces and 2 pumps



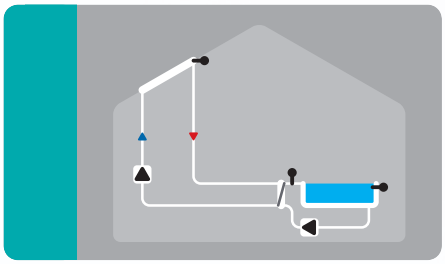
Solar with 2 storages and 2 pumps



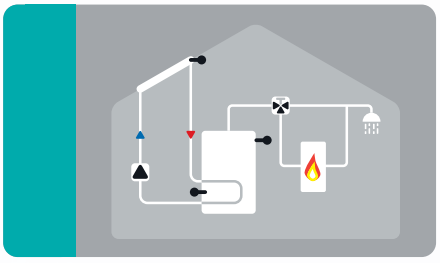
Solar with 2 storages and valve



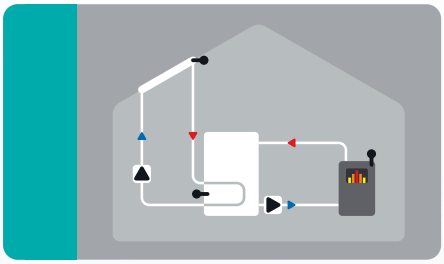
Solar with storage transfer



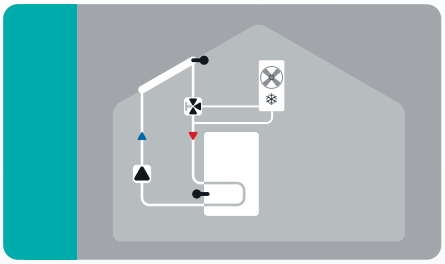
Solar with pool and heat exchanger



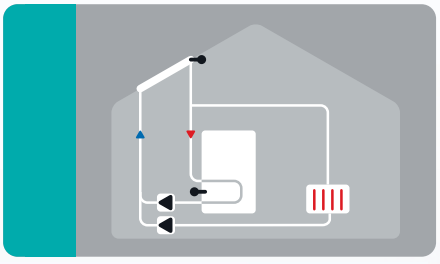
Solar with thermostat and valve



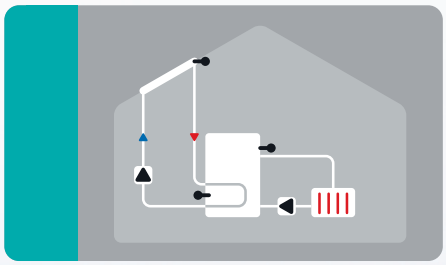
Solar with solid-fuel boiler



Solar with cooling 1 (collector cooling)



Solar with cooling 2 (collector cooling)



Solar with cooling 3 (storage cooling)

The basic schematics of the MTDC and LTDC can be extended by the following additional functions for unused relays:

- Solar bypass
- Backup heating control
- Cooling function
- Return flow increase
- Anti-legionella function
- Storage transfer
- Universal DeltaT
- Always On
- Solid fuel boiler control
- Signalling with activated protection function
- Signalling with new information message
- Pressure monitoring
- Booster for fast system loading
- Heating circuit
- Parallel operating with R1
- Parallel operating with R2
- Thermostat 2

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Hydraulic variants LTDC

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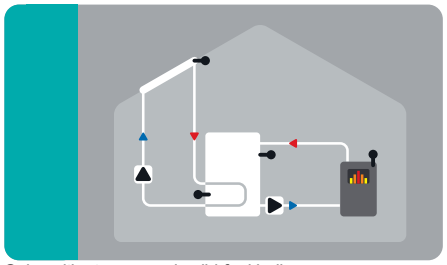
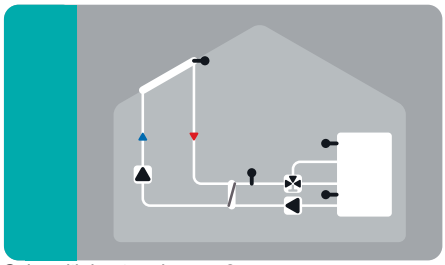
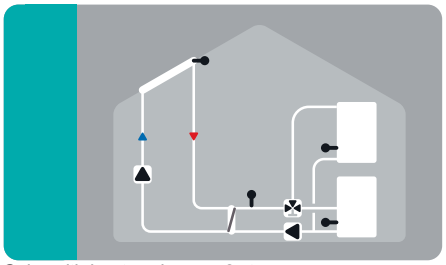
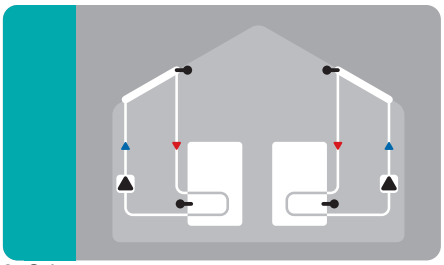
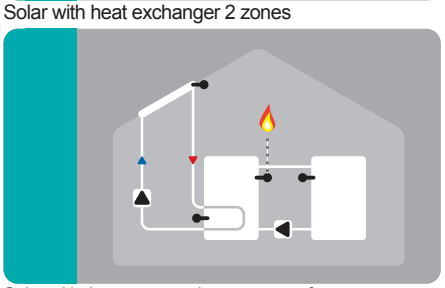
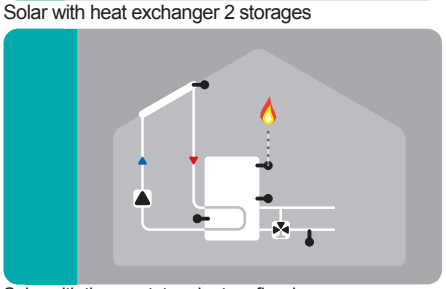

Solar with storage and solid-fuel boiler

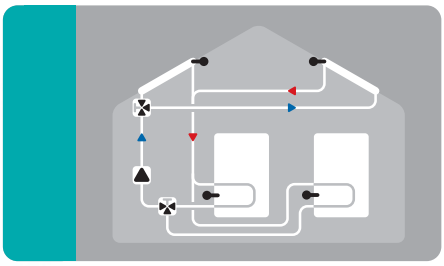

Solar with heat exchanger 2 zones

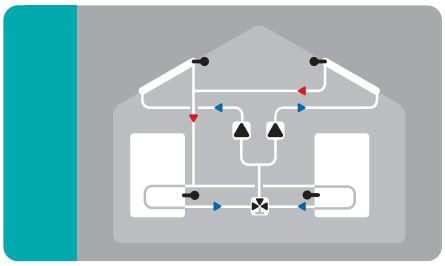

Solar with heat exchanger 2 storages

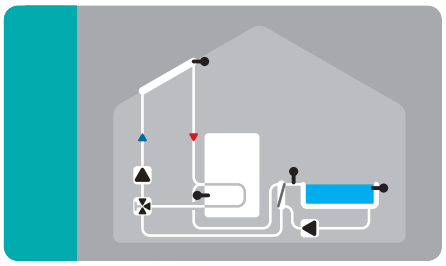

2x Solar

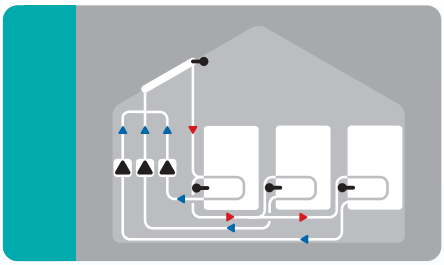

Solar with thermostat and storage transfer

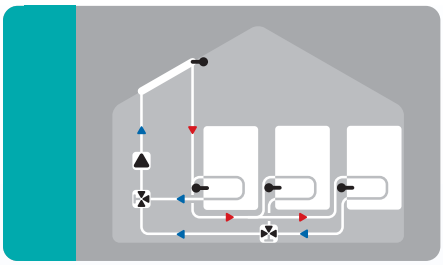

Solar with thermostat and return flow increase


Solar with 2 collector surfaces, 2 storages and 2 valves


Solar with 2 collector surfaces, 2 storages and 2 pumps


Solar with swimming pool, storage, heat exchanger and valve


Solar with 3 storages and 3 pumps


Solar with 3 storages and 2 valves

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- Solar bypass
- Backup heating control
- Cooling function
- Return flow increase
- Anti-legionella function
- Storage transfer
- Universal DeltaT
- Always On
- Solid fuel boiler control
- Signalling with activated protection function
- Signalling with new information message
- Pressure monitoring
- Booster for fast system loading
- Heating circuit
- Parallel operating with R1
- Parallel operating with R2
- Thermostat 2

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Hydraulic variants XTDC

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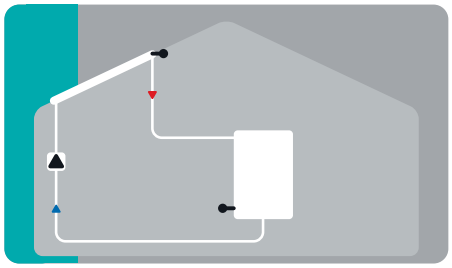
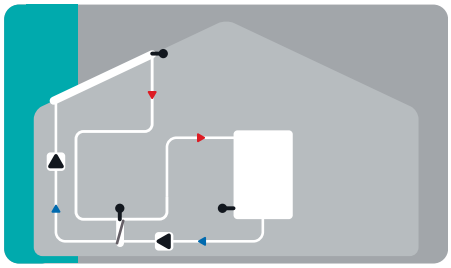
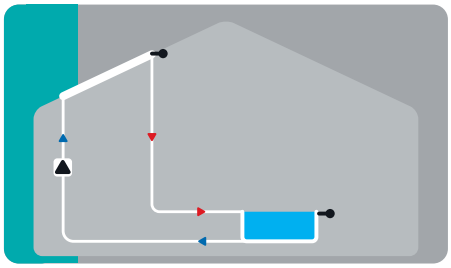


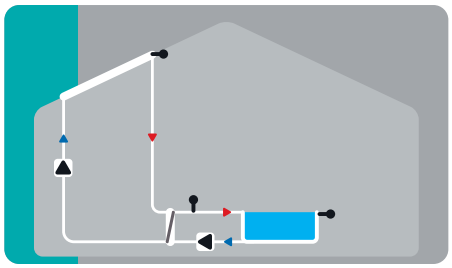
Solar with storage



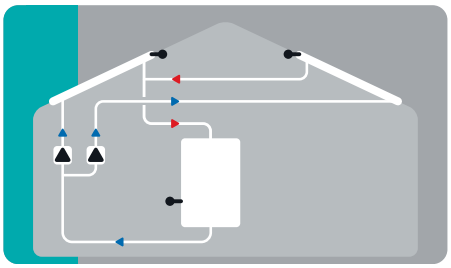
Solar with heat exchanger



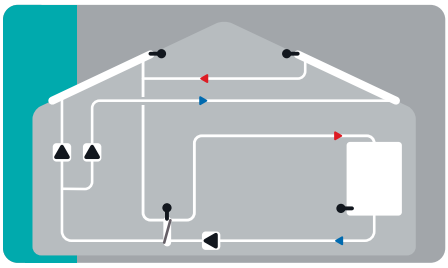
Solar with swimming pool



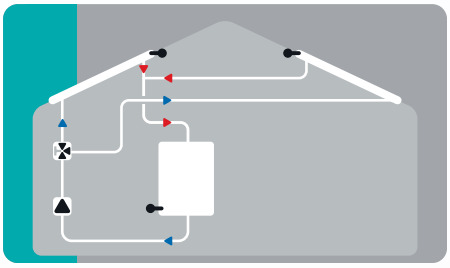
Solar with swimming pool and heat exchanger



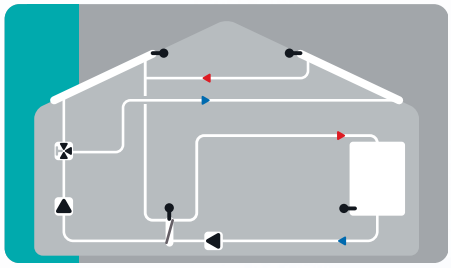
Solar with 2 collector surfaces and 2 pumps



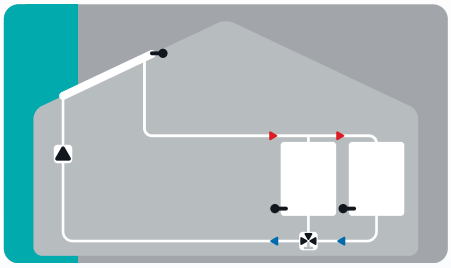
Solar with 2 collector surfaces with 2 pumps, 1 storage, heat exchanger and pump



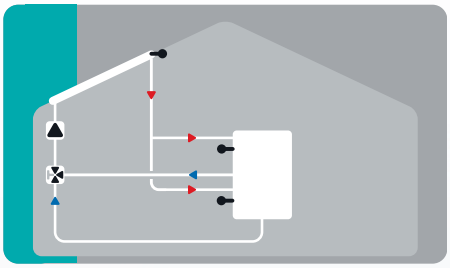
Solar with 2 collector surfaces and switching valve



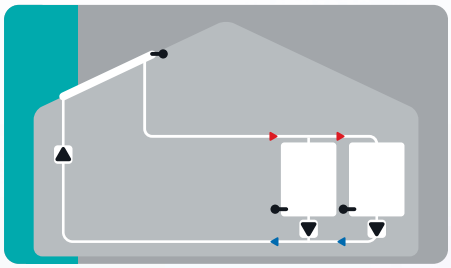
Solar with 2 collector surfaces, switching valve and heat exchanger



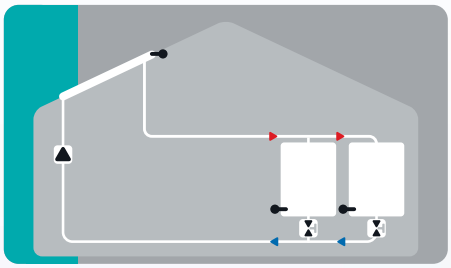
Solar with 2 storages and switching valve



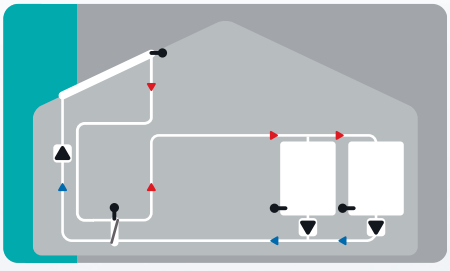
Solar with two-zone storage and switching valve



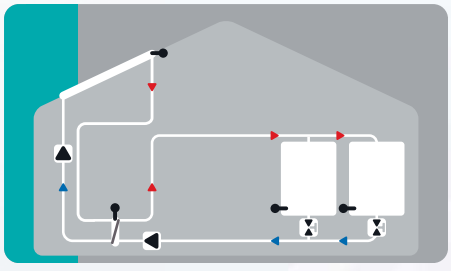
Solar with 2 storages and 2 pumps



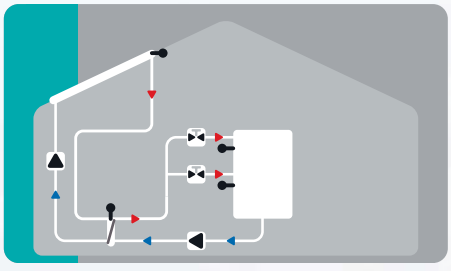
Solar with 2 storages and 2 stop valves



Solar with 2 storages, 2 pumps and heat exchanger



Solar with 2 storages, 2 stop valves and heat exchanger



Solar with two-zone storage and stop valve

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Hydraulic variants XTDC

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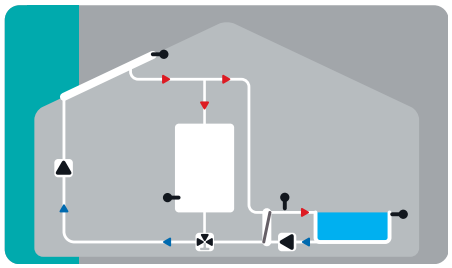
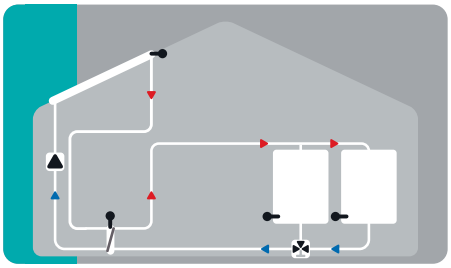
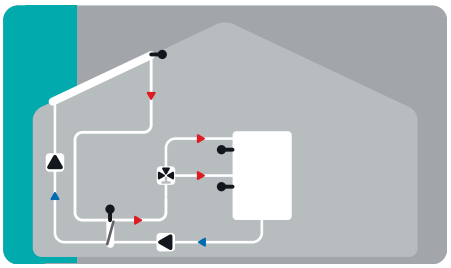


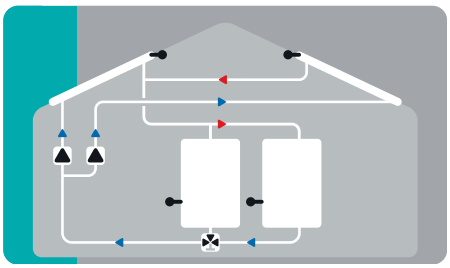
Solar with storage, swimming pool and heat exchanger



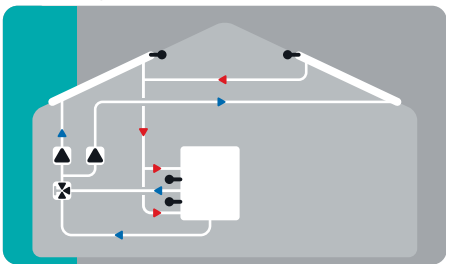
Solar with 2 storages, switching valve and heat exchanger



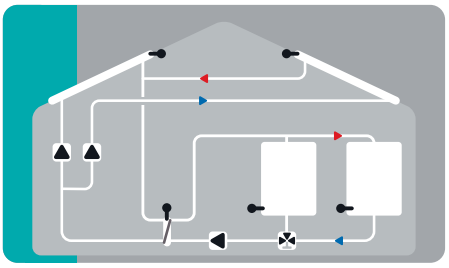
Solar with two-zone storage, switching valve and heat exchanger



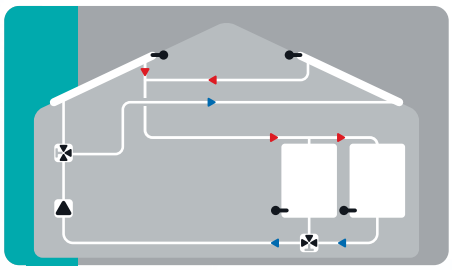
Solar with 2 collector surfaces, 2 storages, 2 pumps and switching valve



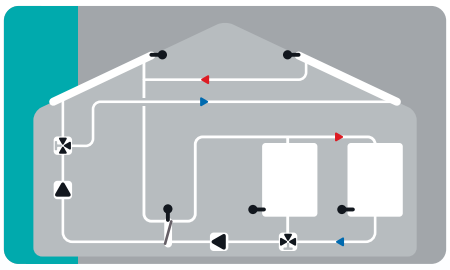
Solar with 2 collector surfaces, two-zone storage, 2 pumps and switching valve



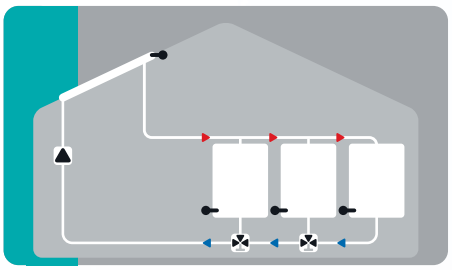
Solar with 2 collector surfaces with 2 pumps, 2 storages, heat exchanger and pump



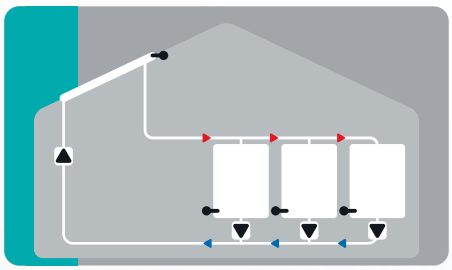
Solar with 2 collector surfaces, 2 storages and 2 switching valves



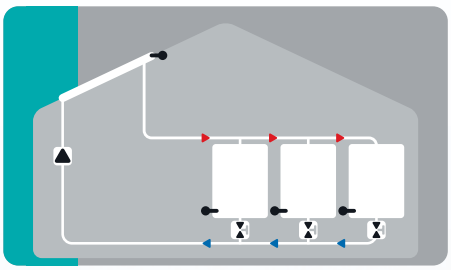
Solar with 2 collector surfaces with 1 valve, 1 pump, 2 storages, heat exchanger and pump



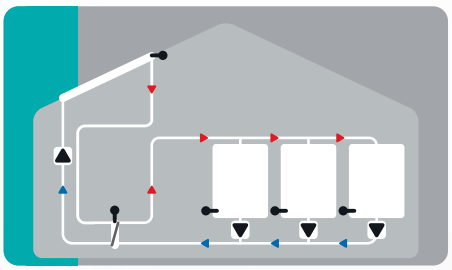
Solar with 3 storages and 2 switching valves



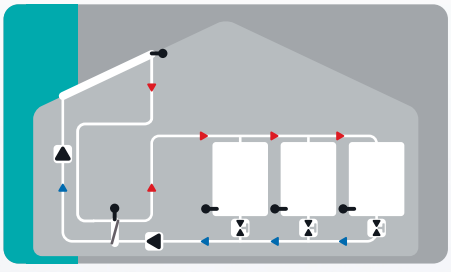
Solar with 3 storages and 3 pumps



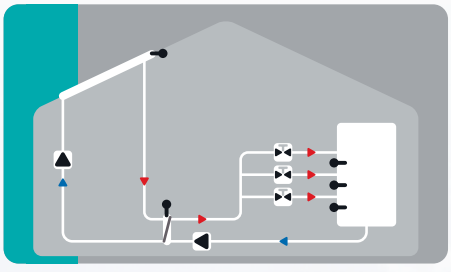
Solar with 3 storages and 3 stop valves



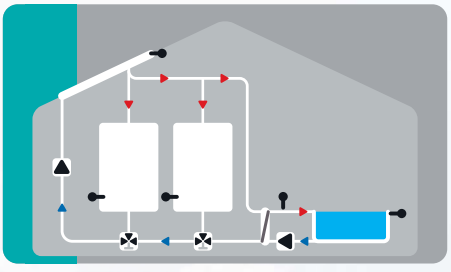
Solar with 3 storages, 3 pumps and heat exchanger



Solar with 3 storages, 3 stop valves and heat exchanger



Solar with three-zone storage, 3 stop valves and heat exchanger



Solar with 2 storages, switching valve and swimming pool with heat exchanger

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>>>>

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Hydraulic variants XTDC

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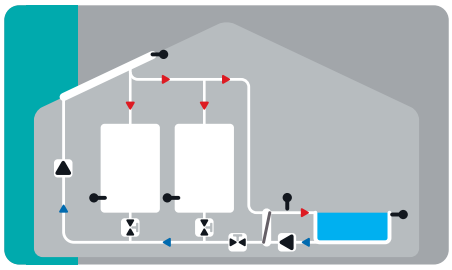
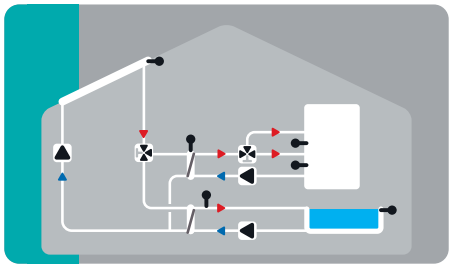
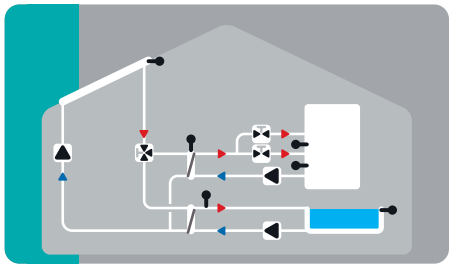


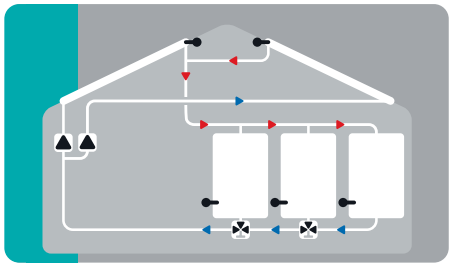
Solar with 2 storages, 3 stop valves and swimming pool with heat exchanger



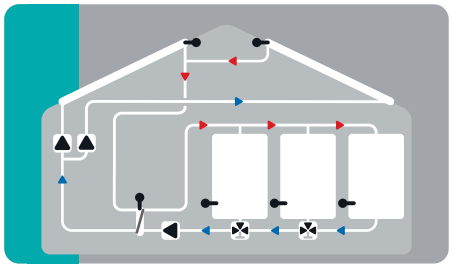
Solar with two-zone storage, switching valve, heat exchanger and pool with heat exchanger



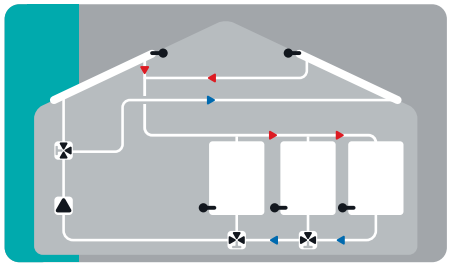
Solar with two-zone storage, 2 stop valves, heat exchanger and pool with heat exchanger



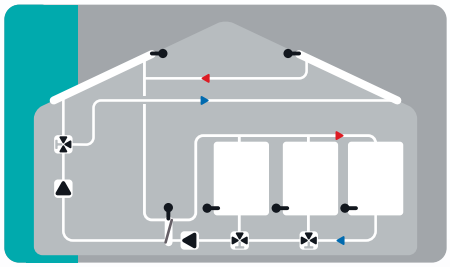
Solar with 2 collector surfaces and 3 storages with 2 switching valves



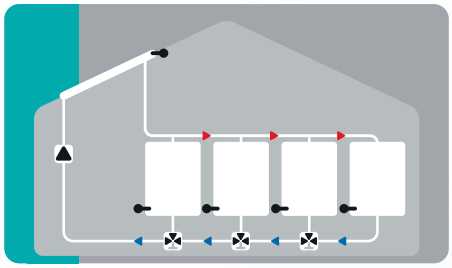
Solar with 2 collector surfaces, 3 storages with 2 switching valves and heat exchanger



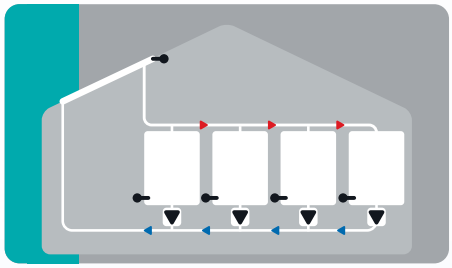
Solar with 2 collector surfaces with 1 valve, 1 pump, 3 storages with valves



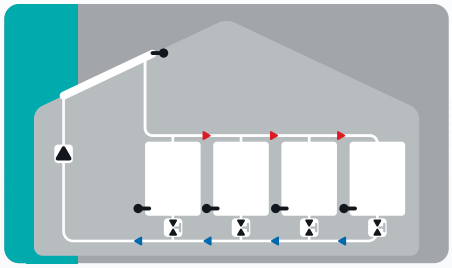
Solar with 2 collector surfaces with 2 pumps, 2 storages, heat exchanger and pump



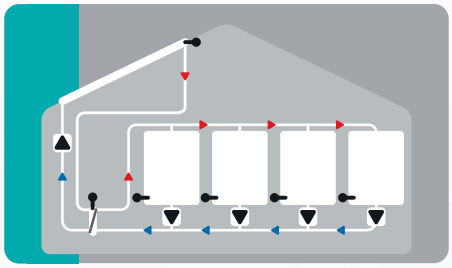
Solar with 4 storages and 3 valves



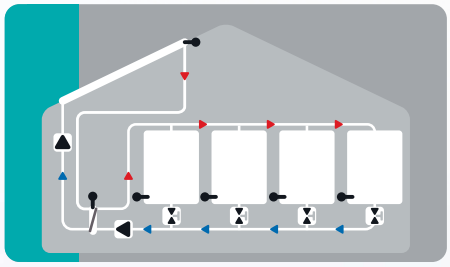
Solar with 4 storages and 4 pumps



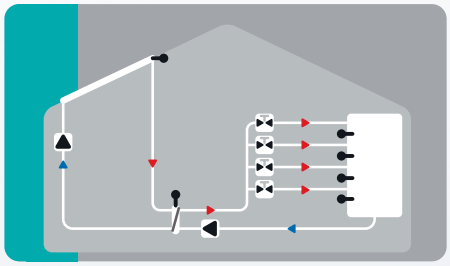
Solar with 4 storages and 4 stop valves



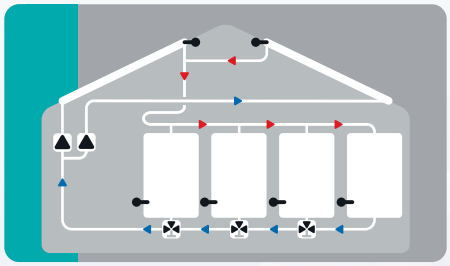
Solar with 4 storages, 4 pumps and heat exchanger



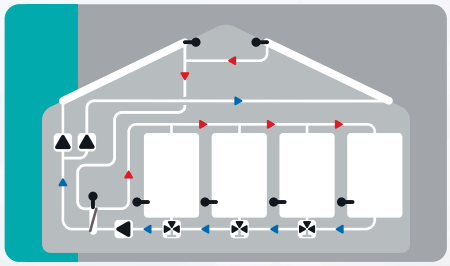
Solar with 4 storages, 4 stop valves and heat exchanger



Solar with four-zone storage and 4 stop valves



Solar with 2 collector surfaces, 4 storages, 2 pumps and 3 switching valves



Solar with 2 collector surfaces, 4 storages, 2 pumps, 3 switching valves and heat exchanger

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Hydraulic variants XTDC

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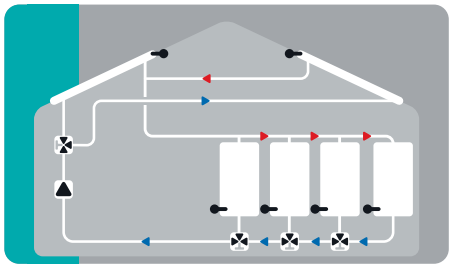
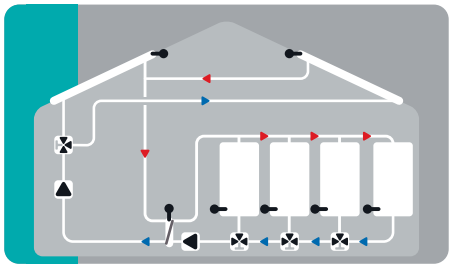
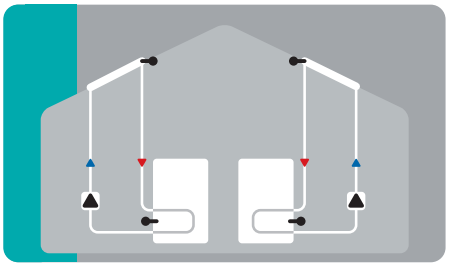


Solar with 2 collector surfaces, 4 storages and 3 switching valves



Solar with 2 collector surfaces, 4 storages and 3 switching valves and heat exchanger



2 x Solar

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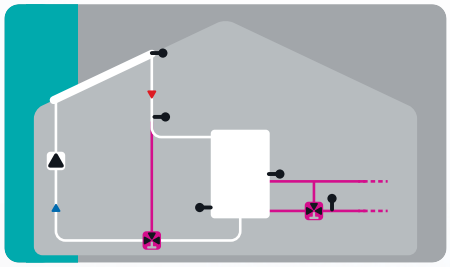
The basic schematics can be extended by the following additional functions for unused relays

- Solar bypass
- Backup heating control
- Cooling function
- Return flow increase
- Anti-legionella function
- Storage transfer
- Universal DeltaT
- Always On
- Thermostat 2
- Solid fuel boiler control
- Signalling with activated protection function
- Signalling with new information message
- Pressure monitoring
- Booster for fast system loading
- Heating Circuit
- Parallel operating with R1
- Parallel operating with R2

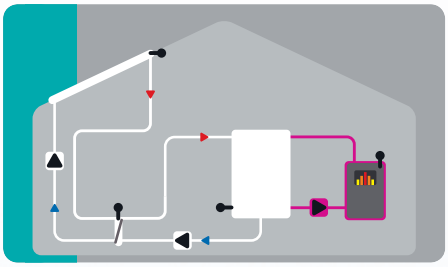
Examples:

System 1 +



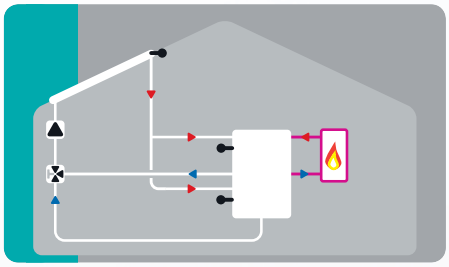
Solar with storage
with additional functions Solar Bypass and Return Flow Increasee

System 2 +



Solar with heat exchanger
with additional function Solid Fuel Boiler

System 9 +



Solar with 2 zone storage and switching valve
with additional function Thermostat

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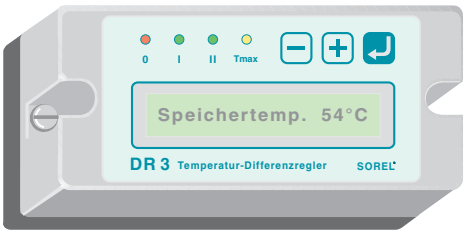
Substitutes for controllers of previous series



This table shows the recommended substitutes for controllers of previous model lines. Please make sure that your system is compatible with the new model before purchase.
Controllers in brackets () may not host all functions of the controller from the previous line.

previous model	recommended controller
STDC	STDC V1
TDC 1	MTDC V1/ LTDC V1
TDC 2	MTDC V1/ LTDC V1
TDC 3	MTDC V2/ LTDC V2
TDC 4 without VFS	LTDC V2
TDC 4 with VFS	LTDC V4
TDC 5	LTDC V2
SD 01	STDC V1 / MTDC V1
SD 01/f	STDC V1 / MTDC V1
DR01	STDC V1 / MTDC V1
DR01F	STDC V1 / MTDC V1
DR1	STDC V1 / MTDC V1
DR1S	STDC V1 / MTDC V1
DR1F	STDC V1 / MTDC V1
DR2	MTDC V2
DR3	MTDC V2
DR4	MTDC V2
DR5	LTDC V2
SR…	(XHCC)

Please make sure that your system is compatible with the new model before purchase.

HCC comparison table

	HCC3	HCC4	HCC5	HCC6	XHCC
Sensor inputs in total	4	6	6	6	14
of which for temperature sensors	3	5	5	4	9
of which for remote adjuster	1	1	1	1	1
of which for humidty	0	0	0	1	0
of which for Direct Sensors VFS / RPS temperature	0	0	0	0	2
of which for Direct Sensors VFS / RPS flow	0	0	0	0	2
Compatible room thermostat	RC 21	RC 21	RC 21	RC 22	RC 21
Relay outputs 230V	3	4	4	4	6
Relay outputs potential free	0	1	1	2	1
Relay outputs 0-10V or PWM	0	0	0	0	2
Programmable thermostat times and functions per day	3	2x3	2x3	2x3	2x3
Comfort function for quick heating	✓	✓	✓	✓	✓
Heating circuit with mixer	✓	✓	✓	✓	1-2
2nd heating circuit without mixer	×	✓	×	×	✓
Domestic hot water	×	×	✓	×	✓
Anti-legionella function	×	×	✓	×	✓
Cooling	×	×	×	✓	✓
Setup wizard	✓	✓	✓	✓	✓
Protection functions	✓	✓	✓	✓	✓
Data storage with statistics and graphic analysis	✓	✓	✓	✓	✓
Error memory and analysis with date and time	✓	✓	✓	✓	✓
Menu blocker	✓	✓	✓	✓	✓

Room thermostat RC21

suitable for HCC 3, HCC 4,HCC 5 and XHCC
Room thermostat with mode switch, heating curve parallel translation via dial and integrated room temperature sensor.
For easy and comfortable remote adjusting.

Art. no. 89021 - RC21 Room temperature sensor and remote adjuster

Room thermostat RC22

suitable for HCC 6
Room thermostat with mode switch, heating curve parallel translation via dial and integrated room temperature sensor and humidity sensor.
For easy and comfortable remote adjusting.

Art. no. 89022 - RC22 Room temperature sensor and remote adjuster

HCC 3

Weather-compensated heating controller for a mixed heating circuit

Hydraulic variants on page 32

Connections

- 4 sensor inputs in total for Pt1000 temperature sensors and room thermostat RC21
- 3 relay outputs 230VAC for pumps/valves

Features

- Attractive housing (H 163mm W 110mm D 51mm) with various installation possibilities
- High-contrast lighted display with extensive full-text and graphic mode
- Self-explanatory operation via 4 softkey entry keys

Menu languages

Český, Deutsch, English, Español, Français, Italiano, Magyar, Polski, Русский

Sensor inputs in total	4
of which for temperature sensors Pt1000	3
of which for remote adjuster	1
Relay outputs 230V	3
Relay outputs potential free	0
Programmable thermostat times and functions per day	3
Comfort function for quick heating	Yes
Heating circuit with mixer	Yes
2nd heating circuit without mixer	No
Domestic hot water	No
Anti-legionella function	No
Cooling	No
Setup wizard	Yes
Protection functions	Yes
Data storage with statistics and graphic analysis	Yes
Error memory and analysis with date and time	Yes
LED red/green for display of operating status	Yes
Menu blocker	Yes
Compatible room thermostat	RC 21

Art. no. 23000 - HCC 3 without sensors

Art. no. 23200 - HCC 3 Set with 1 sensor TR/S2 PT1000 and 1 sensor TA52 PT1000

HCC 4

Weather-compensated heating controller with heat request for a mixed and an unmixed heating circuit

Hydraulic variants on page 32

Connections

- 6 sensor inputs in total for Pt1000 temperature sensors and room thermostat RC21
- 4 relay outputs 230VAC for pumps/valves
- 1 relay output potential free

Features

- Attractive housing (H 163mm W 110mm D 51mm) with various installation possibilities
- High-contrast lighted display with extensive full-text and graphic mode
- Self-explanatory operation via 4 softkey entry keys

Menu languages

Český, Deutsch, English, Español, Français, Italiano, Magyar, Polski, Русский

Sensor inputs in total	6
of which for temperature sensors Pt1000	5
of which for remote adjuster	1
Relay outputs 230V	4
Relay outputs potential free	1
Programmable thermostat times and functions per day	2x3
Comfort function for quick heating	Yes
Heating circuit with mixer	Yes
2nd heating circuit without mixer	Yes
Domestic hot water	No
Anti-legionella function	No
Cooling	No
Setup wizard	Yes
Protection functions	Yes
Data storage with statistics and graphic analysis	Yes
Error memory and analysis with date and time	Yes
LED red/green for display of operating status	Yes
Menu blocker	Yes
Compatible room thermostat	RC 21

Art. no. 24000 - HCC 4 without sensors

Art. no. 24200 - HCC 4 Set with 1 sensor TA52 PT1000, 1 sensor TR/S2 PT1000

Art. no. 24300 - HCC 4 Set with 1 sensor TA52 PT1000, 1 sensor TT/S4 PT1000, 1 sensor TR/S2 PT1000

Art. no. 24400 - HCC 4 Set with 1 sensor TA52 PT1000, 1 sensor TT/S4 PT1000, 2 sensors TR/S2 PT1000

HCC 5

Weather-compensated heating controller with heat request
for a mixed heating circuit with additional domestic hot water function

Hydraulic variants on page 32

Connections

- 6 sensor inputs in total for Pt1000 temperature sensors and room thermostat RC21
- 4 relay outputs 230VAC for pumps/valves
- 1 relay output potential free

Features

- Attractive housing (H 163mm W 110mm D 51mm) with various installation possibilities
- High-contrast lighted display with extensive full-text and graphic mode
- Self-explanatory operation via 4 softkey entry keys

Menu languages

Český, Deutsch, English, Español, Français, Italiano, Polski, Русский

Sensor inputs in total	6
of which for temperature sensors Pt1000	5
of which for remote adjuster	1
Relay outputs 230V	4
Relay outputs potential free	1
Programmable thermostat times and functions per day	2x3
Comfort function for quick heating	Yes
Heating circuit with mixer	Yes
2nd heating circuit without mixer	No
Domestic hot water	Yes
Anti-legionella function	Yes
Cooling	No
Setup wizard	Yes
Protection functions	Yes
Data storage with statistics and graphic analysis	Yes
Error memory and analysis with date and time	Yes
LED red/green for display of operating status	Yes
Menu blocker	Yes
Compatible room thermostat	RC 21

Art. no. 25000 - HCC 5 without sensor

Art. no. 25400 - HCC 5 Set with 1 Sensor TA52 PT1000, 2 sensors TT/S4 PT1000, 1 sensor TR/S2 PT1000

HCC 6

Weather-compensated controller for heating and cooling of a mixed circuit

Hydraulic variants on page 32

Connections

- 6 sensor inputs in total for Pt1000 temperature sensors and room thermostat RC 22
- 4 relay outputs 230VAC for pumps/valves
- 2 relay outputs potential free

Features

- Attractive housing (H 163mm W 110mm D 51mm) with various installation possibilities
- High-contrast lighted display with extensive full-text and graphic mode
- Self-explanatory operation via 4 softkey entry keys

Menu languages

Deutsch, English, Español, Italiano

Sensor inputs in total	6
of which for temperature sensors Pt1000	4
of which for remote adjuster	1
of which for air humidity	1
Relay outputs 230V	4
Relay outputs potential free	2
Programmable thermostat times and functions per day	2x3
Comfort function for quick heating	Yes
Heating circuit with mixer	Yes
2nd heating circuit without mixer	No
Domestic hot water	No
Anti-legionella function	No
Cooling + dehumidifying	Yes
Setup wizard	Yes
Protection functions	Yes
Data storage with statistics and graphic analysis	Yes
Error memory and analysis with date and time	Yes
LED red/green for display of operating status	Yes
Menu blocker	Yes
Compatible room thermostat	RC 22

Art. no. 26000 - HCC 6 without sensors

Art. no. 26400 - HCC 6 Set with 1 sensor TA52 PT1000, 2 sensors TT/S4 PT1000, 1 sensor TR/S2 PT1000

For correct operation of the HCC 6, the RC22 Room thermostat (Art. no. 89022, see „Room thermostat RC22“ on page 25) is required.

XHCC

XtraLarge System Controller
for flexible regulation of complex heating systems
with various heat sources

Hydraulic variants on page 33

Art. no. 28001 - XHCC with CAN

Art. no. 28002 - XHCC with CAN and Ethernet and basic PC Software for analyses

Heating Circuit Controllers HCC

Connections

- 8 sensor inputs for Pt1000 temperature sensors
- 2 sensor inputs for Grundfos VFS sensors for heat metering (flow and temperature measurement), alternatively pressure monitoring via Grundfos RPS sensor
- expansion jack for RC 21
- 2 outputs 0..10V or PWM signal for control of high efficiency pumps, large pumps and frequency converters
- 2 switching outputs for speed control of standard pumps
- 4 relay outputs mechanical 230VAC
- 1 relay output potential free
- CAN in/out for SOREL Connect
- Micro SD Memory Card Slot
- Ethernet connection (optional)

Features

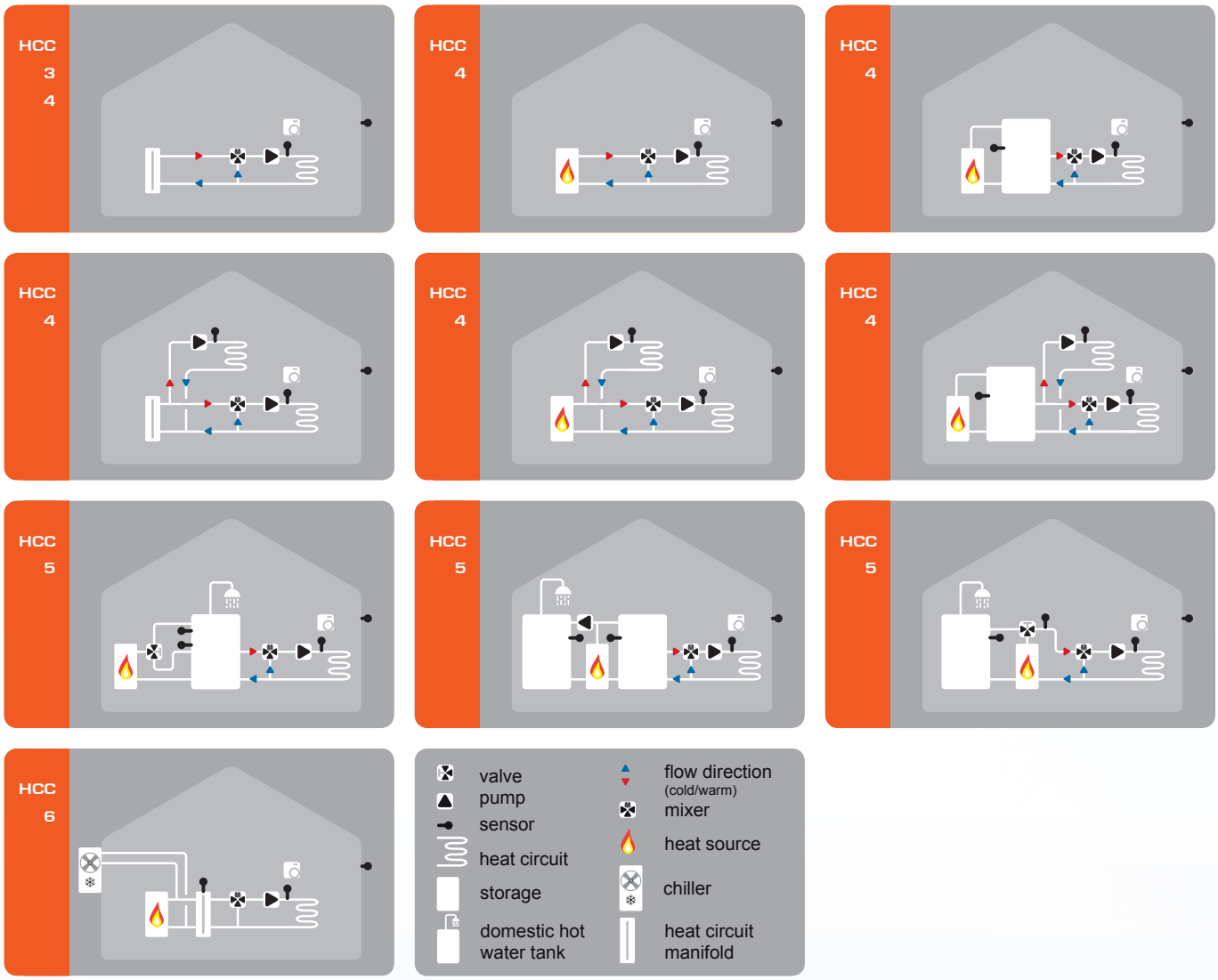
- for weather-controlled heating systems with additional functions for unused relays
- Intuitive operator guidance via 4 input keys
- Full-text menu with explanatory texts and graphic mode with animations
- High-contrast lighted display with 128x128 dots
- Function check and graphical system analysis with long-term memory for statistics about heat quantity and operating hours
- RTC Real Time Clock with >24h power reserve
- White housing RAL9003, protection class IP40, dimensions H 228mm W 180mm D 53mm
- Mounting hardware, spare fuse and user manual

Menu languages

Deutsch English Español Français
Italiano Polski Português

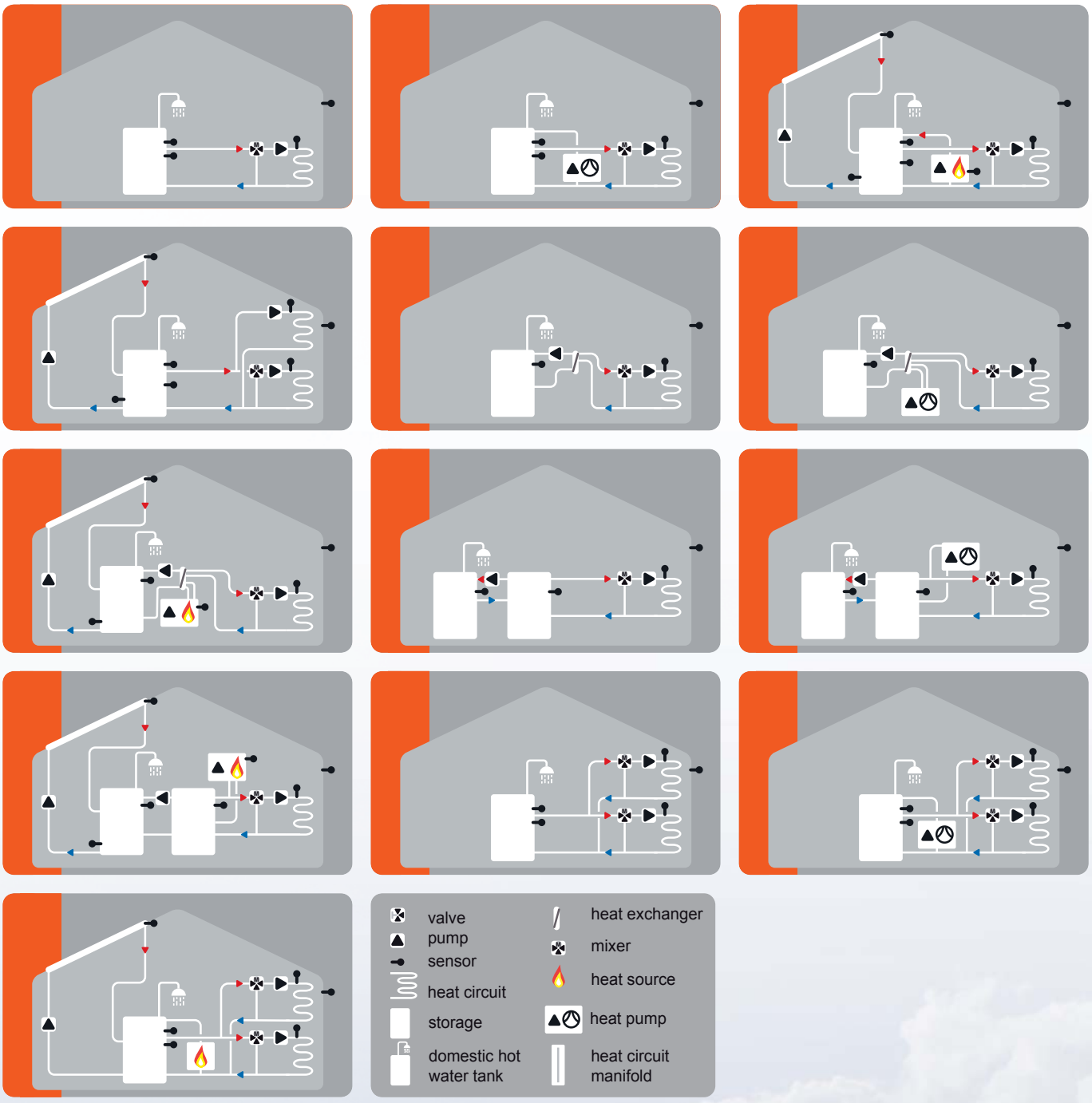
Temperature sensor inputs Pt1000	8
RC21 sensors via optional expansion jack	Yes
Relay outputs 230V	6
of which for speed control of standard pumps	2
Relay output potential free	1
Outputs 0..10V or PWM signal	2
Number of applications	13+
LEDs red/green for display of operating status	2
Simple heat metering	Yes
Flow based heat metering (Grundfos VFS sensor)	Yes (1-2)
Pressure monitoring (Grundfos RPS sensor)	Yes
Time and temperature-controlled thermostat function	Yes
Battery-backed Real Time Clock	Yes
Legionella protection via solar	Yes
Legionella protecion via additional heating	Yes
Cooling function	Yes
Setup wizard	Yes
System protection	Yes
Collector protection	Yes
Storage protection	Yes
Anti-freeze programs	Yes
Recooling	Yes
Start logic for vacuum tube collectors	Yes
Control program for self-dumping systems (drain-back)	Yes
Data storage with statistics and graphic analysis	Yes
Error memory and analysis with date and time	Yes
Menu blocker	Yes
Data logging on Micro-SD-Memory Card	Yes
Ethernet connection with pc software (optional)	Yes
Digital connection / bus system (optional)	Yes

Hydraulic variants HCC



The illustrations should be viewed only as schematic diagrams showing the respective hydraulic systems, and do not claim to be complete. The controller does not replace safety devices under any circumstances. Depending on the specific application, additional system components and safety components may be mandatory, such as check valves, non-return valves, safety temperature limiters, scalding protectors, etc., and must therefore be provided.

Hydraulic variants XHCC



The illustrations should be viewed only as schematic diagrams showing the respective hydraulic systems, and do not claim to be complete. The controller does not replace safety devices under any circumstances. Depending on the specific application, additional system components and safety components may be mandatory, such as check valves, non-return valves, safety temperature limiters, scalding protectors, etc., and must therefore be provided.

Hydraulic variants XHCC

The basic schematics can be extended by the following additional functions for unused relays:

- Solar
- Solar bypass
- External heat exchanger
- Control of additional heating
- Cooling
- Raise of return flow
- Antilegionella
- Storage transfer
- Universal DeltaT
- Always on
- Solid fuel boiler
- Error message
- Pressure monitoring
- Booster
- Parallel operation with R1
- Parallel operation with R2
- Burner
- Boiler pump
- 2. (not mixed) heat circuit
- Zone valve
- Circulation pump

FWC comparison table

	FWC3	FWC4	FWC5
Temperature sensor inputs Pt1000	4	4	4
Sensor inputs for Grundfos VFS sensor	1	1	1
Relay outputs 230V of which for speed control of standard pumps	2 1	3 1	5 0
Outputs 0..10V or PWM signal	0	1	1
Number of applications	2	4	2
LEDs red/green for display of operating status	1	1	1
Heat metering	✓	✓	✓
Time and temperature-controlled thermostat function	✗	✗	✓
Time and temperature-controlled circulation pump switch	✓	✓	✓
Switch for zone valve for optimized storage layering	✗	✓	✓
Pre-regulation of the primary circuit temperature by three-way mixer	✗	✗	✓
Battery-backed Real Time Clock	✓	✓	✓
Anti-legionella function	✓	✓	✓
Setup wizard	✓	✓	✓
Data storage with statistics and graphic analysis	✓	✓	✓
Error memory and analysis with date and time	✓	✓	✓
Menu blocker	✓	✓	✓

FWC 3

The well-established controller for fresh water stations
with speed-controlled primary pump
and additional circulation pump switch.

Hydraulic variants diagrams on page 39

Connections

- 4 sensor inputs for Pt1000 temperature sensors
- 1 sensor input for Grundfos VFS sensor (flow and temperature measurement)
- 1 switching output for speed control of standard pumps with special electronics to ensure quiet running with fast speed control adjustment
- 1 relay output 230VAC for circulation pump

Features

- Attractive housing (H 163mm W 110mm D 51mm) with various installation possibilities
- High-contrast lighted display with extensive full-text and graphic mode
- Self-explanatory operation via 4 softkey entry keys
- High temperature stability and quick adjustment by PID control logic

2 different fresh water systems selectable

- Basic fresh water system
- Fresh water system with circulation pump

Temperature sensor inputs Pt1000	4
Sensor inputs for Grundfos VFS sensor	1
Relay outputs 230V of which for speed control of standard pumps	2 1
Outputs 0..10V or PWM signal	0
Number of applications	2
LEDs red/green for display of operating status	1
Heat metering	Yes
Time and temperature-controlled thermostat function	No
Time and temperature-controlled circulation pump switch	Yes
Switch for zone valve for optimised storage stratification	No
Pre-regulation of the primary circuit temperature by three-way mixer	No
Battery-backed Real Time Clock	Yes
Anti-legionella function	Yes
Setup wizard	Yes
Data storage with statistics and graphic analysis	Yes
Error memory and analysis with date and time	Yes
Menu blocker	Yes

Menu languages

Český Deutsch English Español Français Italiano

Art. no. 43000 - FWC 3

Please note: Controller is available only for producers of fresh water systems

Prices ex works excl. sales tax. SOREL GmbH terms and conditions as can be seen on www.sorel.de shall apply. Discount on request.

FWC 4

The universal controller for fresh water stations
with speed-controlled primary pump
and additional circulation pump switch.

Hydraulic variants diagrams on page 39

Connections

- 4 sensor inputs for Pt1000 temperature sensors
- 1 sensor input for Grundfos VFS sensor (flow and temperature measurement)
- 1 switching output for speed control of standard pumps with special electronics to ensure quiet running with fast speed control adjustment
- 2 relay outputs 230VAC for circulation pump

Features

- Attractive housing (H 163mm W 110mm D 51mm) with various installation possibilities
- High-contrast lighted display with extensive full-text and graphic mode
- Self-explanatory operation via 4 softkey entry keys
- High temperature stability and quick adjustment by PID control logic

4 different fresh water systems selectable

- Basic fresh water system
- Fresh water system with circulation pump
- Fresh water system with zone valve
- Fresh water system with zone valve and circulation pump

Temperature sensor inputs Pt1000	4
Sensor inputs for Grundfos VFS sensor	1
Relay outputs 230V of which for speed control of standard pumps	3 1
Outputs 0..10V or PWM signal	1
Number of applications	4
LEDs red/green for display of operating status	1
Heat metering	Yes
Time and temperature-controlled thermostat function	No
Time and temperature-controlled circulation pump switch	Yes
Switch for zone valve for optimised storage stratification	Yes
Pre-regulation of the primary circuit temperature by three-way mixer	No
Battery-backed Real Time Clock	Yes
Anti-legionella function	Yes
Setup wizard	Yes
Data storage with statistics and graphic analysis	Yes
Error memory and analysis with date and time	Yes
Menu blocker	Yes

Menu languages

Deutsch English Italiano

Art. no. 44000 - FWC 4

Please note: Controller is available only for producers of fresh water systems

Prices ex works excl. sales tax. SOREL GmbH terms and conditions as can be seen on www.sorel.de shall apply. Discount on request.

FWC 5

The controller for large fresh water stations
with speed-controlled 0-10V primary pump,
pre-regulation of the primary temperature,
storage zone valve and additional circulation pump switch

Hydraulic variants diagrams on page 39

Connections

- 4 sensor inputs for Pt1000 temperature sensors
- 1 sensor input for Grundfos VFS sensor (flow and temperature measurement)
- 1 switching output for speed control 0-10V / PWM
- 4 relay outputs 230VAC for circulation pump, storage zone valve and three-way mixer
- 1 relay output for additional functions

Features

- Attractive housing (H 163mm W 110mm D 51mm) with various installation possibilities
- High-contrast lighted display with extensive full-text and graphic mode
- Self-explanatory operation via 4 softkey entry keys
- High temperature stability and quick adjustment by PID control logic and premix in the primary circuit

2 different fresh water systems selectable

- Fresh water system with mixing valve on the primary side and zone valve
- Fresh water system with mixing valve on the primary side, zone valve and circulation pump

Temperature sensor inputs Pt1000	4
Sensor inputs for Grundfos VFS sensor	1
Relay outputs 230V of which for speed control of standard pumps	5 0
Outputs 0..10V or PWM signal	1
Number of applications	2
LEDs red/green for display of operating status	1
Heat metering	Yes
Time and temperature-controlled thermostat function	Yes
Time and temperature-controlled circulation pump switch	Yes
Switch for zone valve for optimised storage stratification	Yes
Pre-regulation of the primary circuit temperature by three-way mixer	Yes
Battery-backed Real Time Clock	Yes
Anti-legionella function	Yes
Setup wizard	Yes
Data storage with statistics and graphic analysis	Yes
Error memory and analysis with date and time	Yes
Menu blocker	Yes

Menu languages

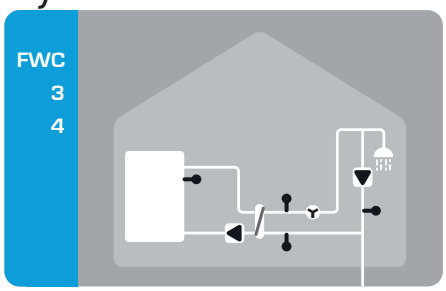
Deutsch English Italiano

Art. no. 45000 - FWC 5

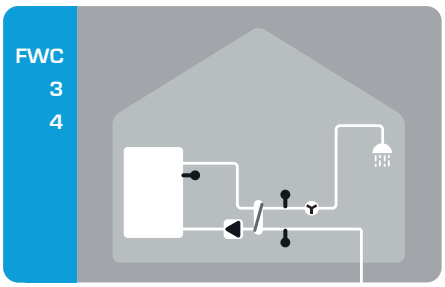
Please note: Controller is available only for producers of fresh water systems

Prices ex works excl. sales tax. SOREL GmbH terms and conditions as can be seen on www.sorel.de shall apply. Discount on request.

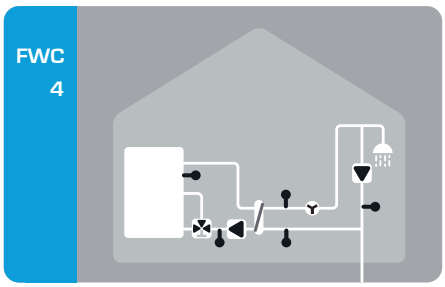
Hydraulic variants FWC



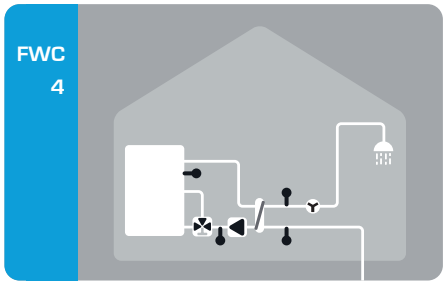
Fresh water system with circulation pump



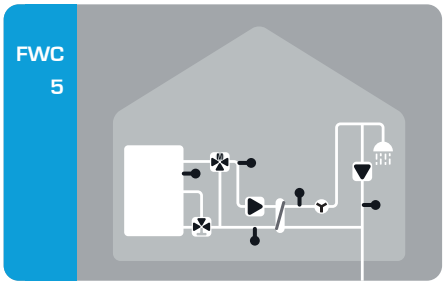
Fresh water system basic



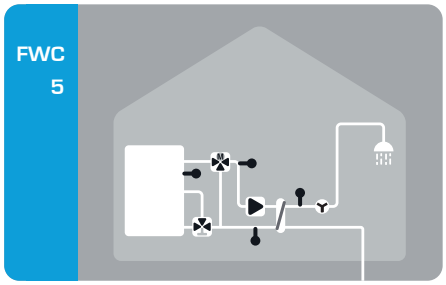
Fresh water system with zone valve and circulation pump



Fresh water system with zone valve



Fresh water system with mixing valve on the primary side, zone valve and circulation pump



Fresh water system with mixing valve on the primary side and zone valve

The illustrations should be viewed only as schematic diagrams showing the respective hydraulic systems, and do not claim to be complete. The controller does not replace safety devices under any circumstances. Depending on the specific application, additional system components and safety components may be mandatory, such as check valves, non-return valves, safety temperature limiters, scalding protectors, etc., and must therefore be provided.

Heat pump controller WPC

WPC 5

Heat pump controller for 5 different heat pump systems

for various heat pump systems with glycol pump, compressor and heating circuit. Detection of external error conditions and Voltage interlock. Optionally with domestic hot water storage and buffer storage.
- 5 sensor inputs for Pt1000 temperature sensors
- 1 sensor input for remote adjuster RT21
- 4 relay outputs 230VAC mech. on
- 1 relay output potential-free (only 230VAC)

Connections
- 5 sensor inputs for Pt1000 temperature sensors
- 1 sensor input for remote adjuster RT21
- 4 relay outputs 230VAC mech. on
- 1 relay output potential-free (only 230VAC)

Features
- High-contrast lighted display with extensive full-text and graphic mode.
- Self-explanatory operation via 4 softkey entry keys.
- Support for initial parameter setting with integrated setup assistants.
- Simplified adjustment of the characteristic heating curve and hours of operation by graphic display.
- Data storage unit with comprehensive statistics and graphic analysis for long-term monitoring of the system.
- Function control with error memory and analysis with date and time.
- Menu blocker against unintentional setting changes can be activated in important menus.
- Attractive housing with various installation possibilities.
- H 163mm, W 110mm, D 51mm

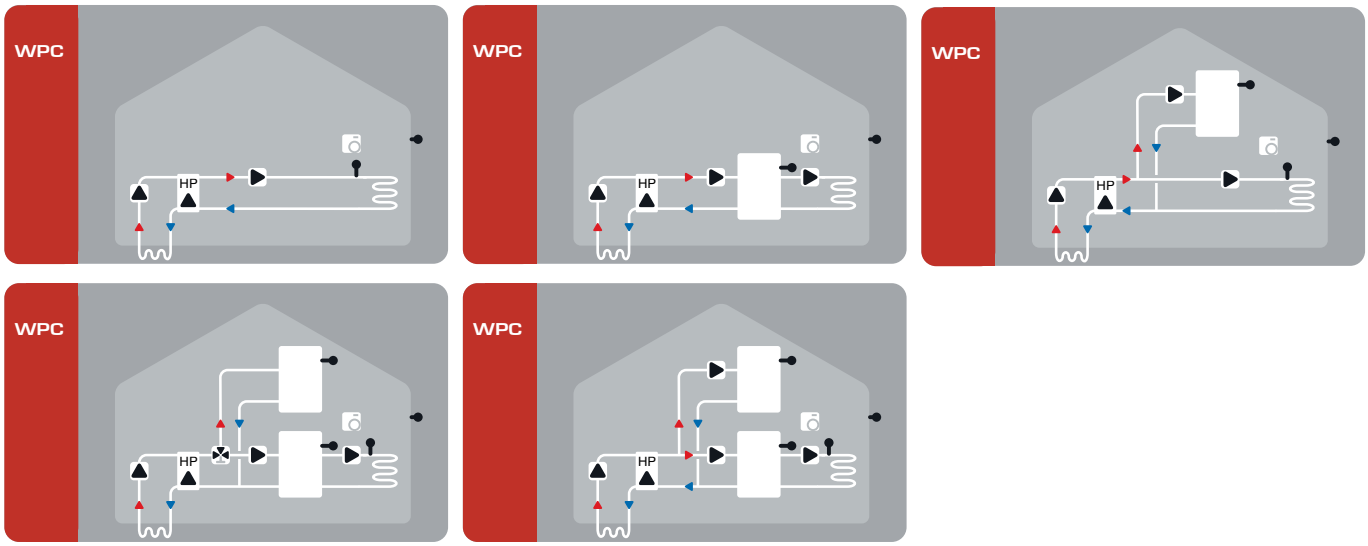
Menu languages

Deutsch English Español Français Italiano Polski

Art. no. 35000 - WPC 5 without sensor

Art. no. 35500 - WPC 5 with 1 sensor TA52 PT1000 and 4 sensors TT/S2 PT1000

Hydraulic variants WPC



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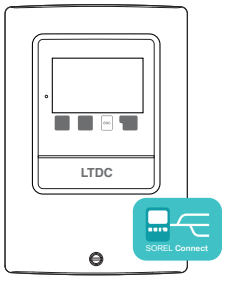
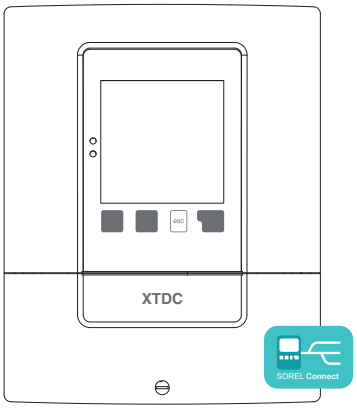
SOREL CONNECT

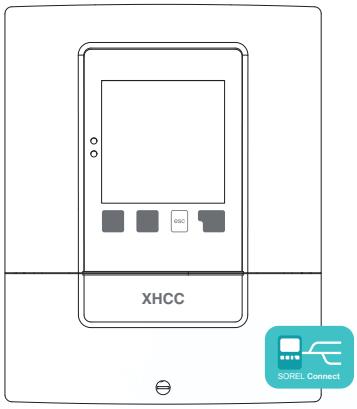
SOREL Connect approved controllers are ready for system monitoring, data logging and remote control.



LTDC with Data Logger

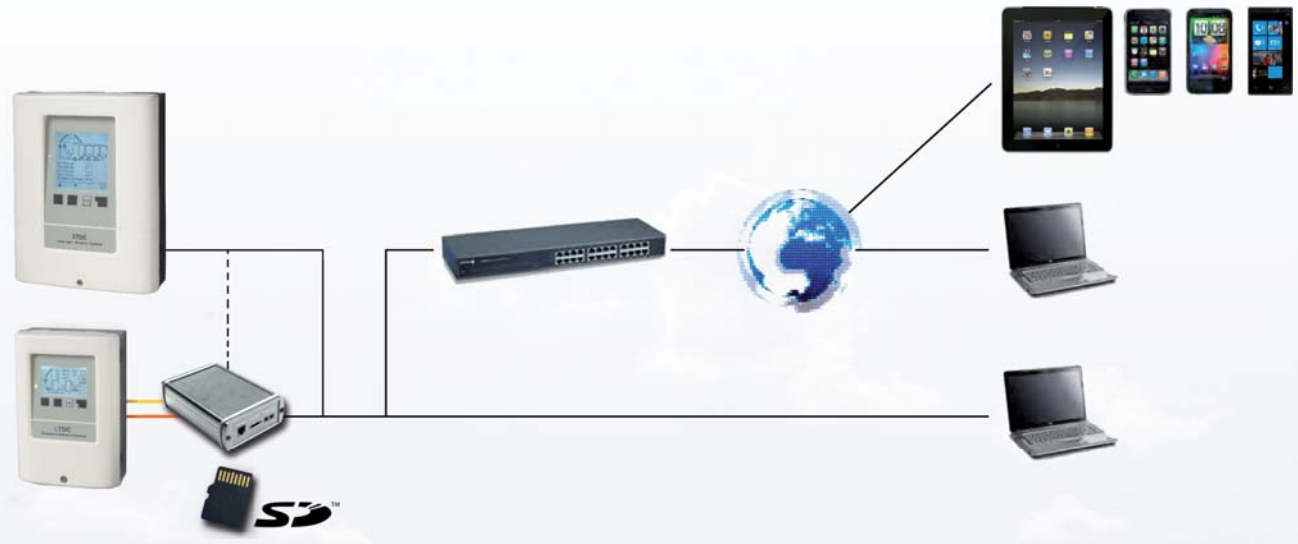


XTDC



XHCC

SOREL Connect is the new network concept that uses CAN-Bus or Ethernet to let the controllers communicate with each other, with local networks or the Internet. In this way, the system can constantly be monitored from anywhere. The optional remote control function enables the user to modify any controller settings in real time.
Data logging can be done via an SD memory card that saves all system data over many years. Together with the SOREL Connect software package for PC, tablet or smartphone, the user can conveniently carry out comprehensive system analyses. The SD card can also be used to update the controller firmware or to save and load customer-specific configurations. By means of the CAN-Bus interface and the CAN Open-protocol, the network controllers can be fully integrated into building automation systems.



Datalogger

For use with the LTDC, XTDC and XHCC. Available with or without Ethernet jack for connection to local area networks and remote connection over the Internet. The Ethernet version includes basic SOREL Connect Windows PC software for system analysis and SD memory card. The software can be upgraded to enable remote control with the software license below.

Art. no. 77700 - Datalogger CAN with basic PC Software for analyses

Art. no. 77701 - Datalogger CAN and Ethernet with basic PC Software for analyses

SOREL Connect upgrade for Remote Control

Activation code to enable remote control and programming in the SOREL Connect Windows PC Software for one controller. Requires compatible controller or data logger with Ethernet capabilities.

Art. no. 77800 - SOREL Connect Software License

Pump groups with TDC controller

Single strand pump group with STDC

S1 Solar 10

completely pre-assembled and tested single strand pump group 3/4“ with solar pump and safety assembly and solar controller STDC
- solar pump WILO ST 25/6
-Temperature Difference Controller STDC plugwired and tested, including 2 sensor probes
- ball valve with integrated non-return valve and thermometer
- flowmeter 2-12 l/min with shut-off and 2 fill and drain ball valves
- safety assembly with manometer 0-10 bar and safety valve 6 bar
- outlet 3/4“ to expansion tank at the safety assembly
- wall-fastening fi xture
- working temperature 120 °C (short-term 160 °C)

Art. no. 61101 - S1 Solar 10 pump group + STDC V1	Art. no. 61102 - S1 Solar 10 pump group + STDC V2

2 strand pump group with MTDC

S2 Solar 30

completely pre-assembled and tested solar station 3/4“ with solar pump, safety assembly, breather tube and solar controller MTDC
- Solar pump WILO ST 25/6
- Temperature Difference Controller MTDC plugwired and tested sensors included
- ball valves with integrated stop valve and thermometer
- Flowmeter 2-12 l/min with stop valve and 2 fill and drain valves
- Safety assembly with manometer 0-10 bar and safety valve 6 bar
- Outlet 3/4“ to expansion tank at the safety assembly
- wall-fastening fixture
- distance between supply and return 125 mm
- Working temperature 120 °C (short-term 160 °C)

Art. no. 63161 - S2 Solar 30 pump group + MTDC V1	Art. no. 63162 - S2 Solar 30 pump group + MTDC V2

2-strand pump group with MTDC

Regusol EL-130

completely pre-assembled and tested solar station DN25 1“ with pump, safety assembly, breather tube and solar controller MTDC
- Pumpe WILO ST 25/6 and Temperature Difference Controller MTDC plugwired and tested, including 1 reservoir and collector sensor
- ball valves with integrated stop valve and thermometer
- flowmeter 2-15l/min with shut-off and fill and drain ball valve
- safety assembly with manometer 0-10bar and safety valve 6bar
- outlet 3/4“ to expansion tank at the safety assembly
- additional fill and drain valve
- wall-fastening fixture
- distance between supply and return 100mm
- working temperature 120°C (short-term 160°C)
- breather tube integrated in the flow pipe

Art. no. 68161 - Regusol pump group + MTDC V1	Art. no. 68162 - Regusol pump group + MTDC V2

2 strand pump group with MTDC

Tacosol ZR 4.0

completely pre-assembled and tested solar station DN25 1“ with pump, safety assembly, breather tube and solar controller MTDC
- Pump WILO ST 20/6 and Temperatur Differenz Controller MTDC plugwired and tested, sensors included
- ball valves with integrated stop valve
- flowmeter 4-16l/min
- Thermometer and manometer
- Safety assembly with manometer 0-10 bar and safety valve 6 bar
- Outlet 3/4“ to expansion tank
- additional fill and drain ball valve
- wall-fastening fixture
- distance between supply and return 125 mm
- Working temperature: 160 °C flow, 110 °C return

Art. no. 69161 - Tacosol pump group + MTDC V1	Art. no. 69162 - Tacosol pump group + MTDC V2

Pump groups without controller

Pump groups of various manufacturers are available on request. Pumps are plug ready.

S1 Solar 1

completely pre-assembled and tested pump groups 3/4“ with solar pump and safety assembly
- Solar pump WILO ST 25/6
- ball valves with integrated stop valve and thermometer
- flow meter 2-12 l/min with stop valve and 2 fill and drain ball valves
- Safety assembly with manometer 0-10 bar and safety valve 6 bar
- Outlet 3/4“ to expansion tank at the safety assembly
- wall-fastening fixture
- Working temperature 120 °C (short-term 160 °C)

Art. no. 71110 - S1 Solar 1

S2 Solar 2

completely pre-assembled and tested pump groups 3/4“ with solar pump and safety assembly
- Solar pump WILO ST 25/6
- ball valves with integrated stop valve and thermometer
- flow meter 2-12 l/min with stop valve and 2 fill and drain ball valves
- Safety assembly with manometer 0-10 bar and safety valve 6 bar
- Outlet 3/4“ to expansion tank at the safety assembly
- wall-fastening fixture
- distance between supply and return 125 mm
- Working temperature 120 °C (short-term 160 °C)

Art. no. 72210 - S2 Solar 2

S2 Solar 3

completely pre-assembled and tested pump groups 3/4“ with solar pump and safety assembly and breather tube
- Solar pump WILO ST 25/6
- ball valves with integrated stop valve and thermometer
- flow meter 2-12 l/min with stop valve and 2 fill and drain ball valves
- Safety assembly with manometer 0-10 bar and safety valve 6 bar
- Outlet 3/4“ to expansion tank at the safety assembly
- wall-fastening fixture
- distance between supply and return 125 mm
- Working temperature 120 °C (short-term 160 °C)

Art. no. 72310 - S2 Solar 3

Auxiliary equipment for all Solar groups

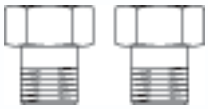
Art. no. 77301 - Wall fixture for expansion tanks for all solar groups

Art. no. 77401 - Stainless steel flex pipe 0,5m for expansion tank, for all solar groups

Auxiliary equipment for Regusol pump groups

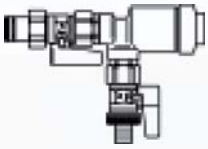
Compression fittings for Regusol E + EL, 4 pcs.	
12 mm	Art. no. 77101
15 mm	Art. no. 77102
16 mm	Art. no. 77103
18 mm	Art. no. 77104
22 mm	Art. no. 77105

Art. no. 77201 - flat sealing part



Art. no. 77202 - DN 20 Connection Set
2x female coupling nut G1“ and 2x threaded nozzle G¾“ male flat sealed for stainless steel corrugated hose.

Art. no. 77901 - 2x lock clamp, secure mounting of the Regusol pump groups when using flexible pipes (e.g. corrugated hose) in combination with the supplied wall installation set.



Art. no. 77902 - Refill pump, hand- and refill pump, with hose connection, fill and drain ball valves

Art. no. 77903 - Connection set for refill pump, consisting of wall mounting set and flexible hose 300 mm

Auxiliary equipment for Tacosol Solargroups

Art. no. 77203 - brazed union 1“G x 22mm (2x set)

Pump groups for heating circuit

Heating circuit pump group

Clima HCC3

completely preassembled and tested 2-Way pump group with 3-way mixer, Servomotor and weather compensated Heating Controller HCC3 incl. sensors
- size: 466 x 250 x 215 mm
- PN10, Max.Temp.110°C, KVS 6,0
- Flow right, return left
- 2 ball valves with integrated thermometer
- external connector 1“ Female
- Pump Wilo Stratos Pico OEM 25/1-6
  Class A high efficency circulation pump with
  integrated constant or variable pressure control
- 3 way mixing valve with KVS 10,0
- Servomotor with 90° operating range
- Heat Circuit Controller HCC3
  completely prewired with connection box
- Outdoor sensor TA52
- Flow sensor TR/S1,5

Art. no. 60560 - Clima HCC3

Heating circuit pump group

Clima HCC4

completely preassembled and tested 2-Way pump group with 3-way mixer, Servomotor and weather compensated Heating Controller HCC3 incl. sensors
- size: 466 x 250 x 215 mm
- PN10, Max.Temp.110°C, KVS 6,0
- Flow right, return left
- 2 ball valves with integrated thermometer
- external connector 1“ Female
- Pump Wilo Stratos Pico OEM 25/1-6
  Class A high efficency circulation pump with
  integrated constant or variable pressure control
- 3 way mixing valve with KVS 10,0
- Servomotor with 90° operating range
- Heat Circuit Controller HCC4
  completely prewired with connection box
- Outdoor sensor TA52
- Flow sensor TR/S1,5
- Flow sensor TR/P4 (for 2nd heat circuit)
- Immersion sensor TT/P4 (for storage)

Art. no. 60570 - Clima HCC4

Heating circuit pump group

Clima HCC5

completely preassembled and tested 2-Way pump group with 3-way mixer, Servomotor and weather compensated Heating Controller HCC3 incl. sensors
- size: 466 x 250 x 215 mm
- PN10, Max.Temp.110°C, KVS 6,0
- Flow right, return left
- 2 ball valves with integrated thermometer
- external connector 1“ Female
- Pump Wilo Stratos Pico OEM 25/1-6
  Class A high efficency circulation pump with
  integrated constant or variable pressure control
- 3 way mixing valve with KVS 10,0
- Servomotor with 90° operating range
- Heat Circuit Controller HCC4
  completely prewired with connection box
- Outdoor sensor TA52
- Flow sensor TR/S1,5
- Flow sensor TR/P4 (for domestic hot water)
- Immersion sensor TT/P4 (for storage)

Art. no. 60580 - Clima HCC5

Accesories

Electric 3-way zone valves of the ESBE series ZV are suitable e.g. for hot water / heat changeover or for other changingover processes in thermal solar and heating systems .

operating voltage:	230 VAC
power consumption:	6VA
max. pressure:	PN10
max. temperature:	94°C
size:	20mm/25mm
connections:	internal thread

Art. no. 76201 - Zone valve ZV3-20

Art. no. 76202 - Zone valve ZV3-25

Mixing valves of the ESBE series VTA3 are particularly suitable for the use at points of withdrawal, where a scald safe function is required, e.g. at solar storage units.

adjustable temperature:	35°C...60°C
max. pressure:	PN10
max. temperature:	90°C
size:	15mm/20mm/25mm

Mixing valves	
Art. no. 76301	Mixing valves VTA321 1/2“ inside thread
Art. no. 76302	Mixing valves VTA321 3/4“ inside thread
Art. no. 76303	Mixing valves VTA322 1“ outside thread
Art. no. 76304	Mixing valves VTA323 22mm compression fitting

Other types and sizes available on request

The ESBE Actuator of the series ARA 600 is particularly suitable for the use of ESBE heating mixer valves

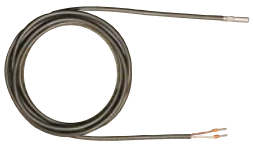
run time at 90° position:	2 minutes
torque:	5 Nm
operating voltage:	230 VAC
power consumption:	5VA
valid temp.of environment:	-5°C....55°C

Actuator ARA661	
Art. no. 76901	

Matching ESBE 3 way mixing valves of type VRG131 made of brass with female thread are suitable for heating circuits as well as for sanitary installations with up to 130 °C and 1 MPa/10bar.

3-mixing valves	
Art. no. 76101	VRG131 20 mm - 6,3 KVS
Art. no. 76102	VRG131 25 mm - 6,3 KVS
Art. no. 76103	VRG131 25 mm - 10 KVS

Temperature sensors with PT1000 sensor elements - with guaranteed degree-accuracy according to DIN EN60751 (IEC751) - ensure precise recognition of the temperature difference and optimum use of energy.



Art. no. 85220 - **TT/S2** Temperature immersion sensor with 2 m silicone cable, 180°C

Art. no. 85240 - **TT/S4** Temperature immersion sensor with 4 m silicone cable, 180°C

Art. no. 85140 - **TT/P4** Temperature immersion sensor with 4 m PVC cable, 95°C

Art. no. 86325 -**TT/T2.5** Temperature immersion sensor with 2,5 m special cable, 220/300 °C

Art. no. 81220 - **TR/S2** Temperature pipe sensor with 2 m silicone cable, 180°C

Art. no. 81140 - **TR/P4** Temperature pipe sensor with 4 m PVC cable, 95°C

Art. no. 82220 - **TF/S2** Temperature flat contact sensor with 2 m silicone cable,180°C

Art. no. 83140 -**TD/P4** Temperature tertiary sensor with 4 m PVC cable, 95°C

Art. no. 87000 -**TA52** Temperature external sensor box

Immersion sleeves

Immersion sleeves R 1/2“ with PG7 cable threading and silicone seal, in various lengths and designs.

Art. no. 91030 - **TH30** with 30mm brass immersion pipe, 150°C

Art. no. 91045 - **TH45** with 45mm brass immersion pipe, 150°C

Art. no. 90060 - **TH60** w/ tin-plated 60mm copper imm. pipe, 150/180 °C

Art. no. 90100 -**TH100** w/ tin-plated 100mm copper imm. pipe, 150/180 °C

Art. no. 90150 - **TH150** w/ tin-plated 150mm copper imm. pipe, 150/180 °C

Art. no. 90200 - **TH200** w/ tin-plated 200mm copper imm. pipe, 150/180 °C

Art. no. 90300 - **TH300** w/ tin-plated 300mm copper imm. pipe, 150/180 °C

Art. no. 90400 -**TH400** w/ tin-plated 400mm copper imm. pipe, 150/180 °C

Art. no. 92100 - **TH100E** stainl. steel imm. sleeve 100mm, test prod up to 300°C

Art. no. 92150 -**TH150E** stainl. steel imm. sleeve 150mm, test prod up to 300°C

Art. no. 92200 -**TH200E** stainl. steel imm. sleeve 200mm, test prod up to 300°C

WMC 1

Heat metering controller allows easy function control
for solar- and heating systems.

Incl. combined flow/temperature VFS sensor in stainless steel for volume flow and return temperature measuring (0-100°C) for heat metering via flow temperature and return temperature and flow rate of the system
- 4 sensor inputs for Pt1000 temperature sensors
- 2 sensor inputs for VFS sensor (Volume flow and return temperature)
- incl. VFS Combisensor for flow rate and return temperature measuring (0-100°C)

Connections
- 4 sensor inputs for Pt1000 temperature sensors
- 2 sensor inputs for VFS sensor (Volume flow and return temperature)
- incl. VFS Combisensor for flow rate and return temperature measuring (0-100°C)

Features
- High contrast lighted display with extensive full-text and graphic mode.
- Self-explanatory operation via 4 softkey entry keys.
- Integrated setup assistant.
- Data storage unit with comprehensive statistics and graphic analysis for long-term monitoring of the system.
- Function control with error memory and analysis with date and time.
- Menu blocker against unintentional setting changes can be activated in important menus.
- Attractive housing with various installation possibilities.
- H 163mm, W 110mm, D 51mm

Menu languages

Deutsch English Español Français Italiano Português

Art. no. 75210 - WMC1 2S VFS1-12 incl. 1 sensor TT/S2 PT1000
Art. no. 75220 - WMC 2S VFS2-40 incl. 1 sensor TT/S2 PT1000
Art. no. 75230 - WMC 2S VFS5-100 incl. 1 sensor TT/S2 PT1000
Art. no. 75240 - WMC 2S VFS10-200 incl. 1 sensor TT/S2 PT1000
Art. no. 75250 - WMC 2S VFS20-400 incl. 1 sensor TT/S2 PT1000

Miscellaneous

VFS sensor for combined flow and temperature measurement

- no movable parts in the flow
- minimal permanent pressure loss
- no increasing measurement deviation due to wear-out
- „2 in 1 Sensor“ - flow and temperature in one sensor

Available in 1,2-12 l/min, 2-40 l/min, 5-100 l/min, 10-200 l/min in stainless steel tube and 20-400 l/min in plastic tube

Art. no. 78012 - **VFS 1-12L/Min** 0-100°C for solar 3/4“, stainless steel

Art. no. 78040 - **VFS 2-40L/Min** 0-100°C for solar 3/4“, stainless steel

Art. no. 78100 - **VFS 5-100L/Min** 0-100°C for solar 1“, stainless steel

Art. no. 78200 - **VFS 10-200L/Min** 0-100°C for solar 1“ 1/4, stainless steel

Art. no. 78400 - **VFS 20-400L/Min** 0-100°C for solar, plastic

Overvoltage protection for collector sensor in 90x35x38mm branch box

Art. no. 77600 - **KA12 Overvoltage protection** for collector sensor in 90x35x38mm branch box

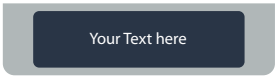
External relay with switch-over contact is everywhere to be used where e.g. outputs of the controller shall be operated potential-free, the control power of the controller is not sufficient or a switch-over contact is required instead of a make contact. The operating voltage of the spool is 230V AC, the maximal operating current is 10A.
Switch box dimensions: 8,5 x 8,5 cm.

Art. no. 77500 - **Relais IFR/1W**

100 pieces **fuse 2A** isolated, slow blow, boxed

Art. no. 02125 - 100x fuse 2A slow blow

OEM customizations (special net price, no discounts)



TDC/HCC.. Front label, paper Paperstrip in a transparent plastic window	TDC/HCC.. frontlabel, plastic, up to 4 colours

Front foil STDC Only available when ordering at least 1.000 STDC in a blanket order - colour and print according to customer

Labeling of box/package/bag (size 70mm x 25,4mm, black&white)	Sensors in labeled plastic bags

Customized barcode and type decals (size 70 x 22 mm)	Customised manual (customer‘s logo, name, address, contact information)

General notes:
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